



ASA/ANSI S1.4-2014/Part 2 / IEC
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AMERICAN NATIONAL STANDARD

Electroacoustics – Sound Level Meters – Part 2: Pattern Evaluation Tests

(a nationally adopted international standard)

Secretariat:

Acoustical Society of America

Approved on July 21, 2014:

American National Standards Institute, Inc.

Abstract

ANSI/ASA S1.4-2014/Part 2 / IEC 61672-2:2013 provides details of the tests necessary to verify conformance to all mandatory specifications given in ANSI/ASA S1.4-2014/Part 1 / IEC 61672-1:2013 for time-weighting sound level meters, integrating-averaging sound level meters, and integrating sound level meters. Pattern-evaluation tests apply for each channel of a multi-channel sound level meter, as necessary. Tests and test methods are applicable to class 1 and class 2 sound level meters. The aim is to ensure that all laboratories use consistent methods to perform pattern-evaluation tests. This edition constitutes a technical revision; the main technical changes with regard to the previous edition concern conformance to specifications which is now demonstrated when measured deviations from design goals do not exceed the applicable acceptance limits, and when the uncertainty of measurement does not exceed the corresponding maximum permitted uncertainty, with both uncertainties determined for a coverage probability of 95 %. In this document, references to IEC 61672-1, IEC 61672-2, and IEC 61672-3 refer to the second editions of the IEC standards unless stated otherwise. They refer equally to the ANSI/ASA S1.4-2014 / IEC 61672:2013 editions.

Procedures for the pattern-evaluation testing of sound level meters designed to conform to the specifications of IEC 61672-1:2002 were given in IEC 61672-2:2003.

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ANSI/ASA S1.4-2014/Part 2 /
IEC 61672-2:2013

Accredited Standards Committee S1, Acoustics

Standards Secretariat
Acoustical Society of America
1305 Walt Whitman Road, Suite 300
Melville, NY 11747

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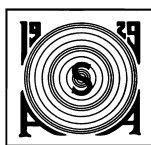
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Acoustical Society of America
ASA Secretariat
1305 Walt Whitman Road, Suite 300
Melville, New York 11747
Telephone: 1 (631) 390-0215
Fax: 1 (631) 923-2875
E-mail: asastds@acousticalsociety.org

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Foreword

[This Foreword is for information only, and is not a part of the American National Standard ANSI/ASA S1.4-2014/Part 2 / IEC 61672-2:2013 American National Standard Electroacoustics – Sound Level Meters – Part 2: Pattern Evaluation Tests. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the standard.]

This standard comprises a part of a group of definitions, standards, and specifications for use in acoustics. It was developed and approved by Accredited Standards Committee S1 Acoustics, under its approved operating procedures. Those procedures have been accredited by the American National Standards Institute (ANSI). The Scope of Accredited Standards Committee S1 is as follows:

Standards, specifications, methods of measurement and test, and terminology in the field of physical acoustics, including architectural acoustics, electroacoustics, sonics and ultrasonics, and underwater sound, but excluding those aspects which pertain to biological safety, tolerances, and comfort.

This standard is identical to IEC 61672-2:2013, which was prepared by IEC Technical Committee 29, in cooperation with the International Organization of Legal Metrology (OIML). However, in conformance with ANSI and IEC rules, the words “this part of ANSI/ASA S1.4 / IEC 61672” replace the words “this part of IEC 61672” where they appear in the IEC document, decimal points were substituted in place of the decimal commas used in IEC documents, and American English spelling is used in place of British English spelling.

The ANSI/ASA equivalents for the ISO standards in the IEC 61672 series and other referenced nationally adopted standards are given below:

- ANSI/ASA S1.4-2014/Part 1 / IEC 61672-1:2013 is an identical national adoption of IEC 61672-1:2013.
- ANSI/ASA S1.4-2014/Part 2 / IEC 61672-2:2013 is an identical national adoption of IEC 61672-2:2013.
- ANSI/ASA S1.4-2014/Part 3 / IEC 61672-3:2013 is an identical national adoption of IEC 61672-3:2013.

This nationally adopted international standard is one of three standards that, taken together, revise and replace ANSI/ASA S1.4-1983 (R2006), ANSI S1.4A-1985 (R2006) and ANSI S1.43-1997 (R2007). The subject matter in this document (Part 2) was not part of the superseded American National Standards.

U.S. NOTE: The following introductory text describes the differences between the current version of IEC 61672-2 and the 2003 version; it does NOT present the differences between this version and the previous version of ANSI S1.4-1983, ANSI S1.4A-1985, or ANSI S1.43-1997.

This second edition cancels and replaces the first edition published in 2003. This second edition constitutes a technical revision.

The main technical changes with regard to the previous edition are as follows:

In this second edition, conformance to specifications is demonstrated when:

- a) measured deviations from design goals do not exceed the applicable acceptance limits, and
- b) the uncertainty of measurement does not exceed the corresponding maximum permitted uncertainty, with both uncertainties determined for a coverage probability of 95 %.

At the time this Standard was submitted to Accredited Standards Committee S1, Acoustics for approval, the membership was as follows:

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Individual Experts of Accredited Standards Committee S1, Acoustics, were:

V. Buzduga
P. Hanes

W.W. Lang
V. Nedzelnitsky
P.D. Schomer

C. Walber
L. Wu

Working Group S1/WG 17, Sound Level Meters and Integrating Sound Level Meters, which assisted Accredited Standards Committee S1, Acoustics, in the development of this standard, had the following membership:

G.R. Stephany, Chair

M. Alexander
R.J. Anderson
P.J. Battenberg

B.M. Brooks
K. Cox
J.J. Earshen

P. Hanes
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J.P. Seiler

Suggestions for improvements to this standard will be welcomed. They should be sent to Accredited Standards Committee S1, Acoustics, in care of the Standards Secretariat of the Acoustical Society of America, 1305 Walt Whitman Road, Suite 300, Melville, New York 11747. Telephone: 631-390-0215; FAX: 631-923-2875; E-mail: asastds@acousticalsociety.org.

American National Standard

Electroacoustics – Sound Level Meters – Part 2: Pattern Evaluation Tests

1 Scope

This part of ANSI/ASA S1.4/IEC 61672 provides details of the tests necessary to verify conformance to all mandatory specifications given in IEC 61672-1 for time-weighting sound level meters, integrating-averaging sound level meters, and integrating sound level meters. Pattern-evaluation tests apply for each channel of a multi-channel sound level meter, as necessary. Tests and test methods are applicable to class 1 and class 2 sound level meters. The aim is to ensure that all laboratories use consistent methods to perform pattern-evaluation tests.

NOTE 1 In this document, references to IEC 61672-1, IEC 61672-2, and IEC 61672-3 refer to the second editions unless stated otherwise.

U.S. INFORMATIVE NOTE: In this document, references to IEC 61672-1, IEC 61672-2, and IEC 61672-3 refer to the three parts of ANSI/ASA S1.4-2014 / IEC 61672:2013. See the list provided in the Foreword.

NOTE 2 Procedures for the pattern-evaluation testing of sound level meters designed to conform to the specifications of IEC 61672-1:2002 were given in IEC 61672-2:2003.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60942, *Electroacoustics – Sound calibrators*

IEC 61000-4-2:2008, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 61000-4-3:2010, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic-field immunity test*

IEC 61000-4-6:2008, *Electromagnetic compatibility (EMC) – Part 4-6: Testing and measurement techniques – Immunity to conducted disturbances, induced by radio-frequency fields*

IEC 61000-6-2:2005, *Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments*

IEC 61094-1, *Measurement microphones – Part 1: Specifications for laboratory standard microphones*

IEC 61094-5, *Measurement microphones – Part 5: Methods for pressure calibration of working standard microphones by comparison*