



Edition 1.1 2017-03 CONSOLIDATED VERSION

TECHNICAL SPECIFICATION



Electroacoustics – Instruments for the measurement of sound intensity – Electromagnetic and electrostatic compatibility requirements and test procedures

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 17.140.50; 33.100.10; 33.100.20

ISBN 978-2-8322-4087-8

Warning! Make sure that you obtained this publication from an authorized distributor.





Edition 1.1 2017-03 CONSOLIDATED VERSION

REDLINE VERSION



Electroacoustics – Instruments for the measurement of sound intensity – Electromagnetic and electrostatic compatibility requirements and test procedures



CONTENTS

FΟ	REWO)RD	3		
1	Scope				
2	Normative references				
3	Terms and definitions				
4	Electromagnetic and electrostatic compatibility requirements				
	4.1	General			
	4.2	Emission limits	7		
	4.3	Electrostatic discharges	7		
	4.4	Immunity to power- and radio-frequency fields and conducted disturbances	7		
5	Test procedures				
	5.1	General	9		
	5.2	Emission measurements	9		
	5.3	Tests for electrostatic discharge	10		
	5.4	Tests for immunity to power- and radio-frequency fields and conducted disturbances	10		
6	Inform				
		mation to be included in the instruction manual			
Anı	Annex A (informative) Radio-frequency emission limits				
Bib	liogra	phy	13		
		- Limits for radiated disturbance of Class B information technology			
equ	ıipmer	nt (ITE) at a measuring distance of 10 m	12		
Tal	ole A.2	2 – Limits for conducted disturbance at the mains ports of Class B ITE	12		

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROACOUSTICS – INSTRUMENTS FOR THE MEASUREMENT OF SOUND INTENSITY – ELECTROMAGNETIC AND ELECTROSTATIC COMPATIBILITY REQUIREMENTS AND TEST PROCEDURES

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC TS 62370 edition 1.1 contains the first edition (2004-05) [documents 29/540/DTS and 29/544A/RVC] and its amendment 1 (2017-03) [documents 29/916/DTS and 29/939/RVDTS].

In this Redline version, a vertical line in the margin shows where the technical content is modified by amendment 1. Additions are in green text, deletions are in strikethrough red text. A separate Final version with all changes accepted is available in this publication.

The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical specification when

- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62370, which is a technical specification, has been prepared by IEC technical committee 29: Electroacoustics.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

ELECTROACOUSTICS – INSTRUMENTS FOR THE MEASUREMENT OF SOUND INTENSITY – ELECTROMAGNETIC AND ELECTROSTATIC COMPATIBILITY REQUIREMENTS AND TEST PROCEDURES

1 Scope

- 1.1 This Technical Specification specifies requirements for instruments that measure sound intensity using pairs of pressure sensing microphones with respect to their immunity to power-and radio-frequency fields and to electrostatic discharge, and the permitted radio-frequency emissions, together with test procedures to verify conformance. Sound intensity measuring instruments are available in many different configurations and may be powered by batteries or from external power supply systems. The technical requirements in this Technical Specification apply to all configurations of instruments for the measurement of sound intensity.
- 1.2 The electromagnetic and electrostatic compatibility requirements are equally applicable for sound intensity measuring instruments used in residential, commercial and light-industrial environments, or industrial sites. The requirements of this Technical Specification are additional to those contained in IEC 61043 and do not alter any of the specifications contained therein. The requirements do not apply retrospectively to sound intensity measuring instruments complying with IEC 61043 prior to the publication of this Technical Specification.
- NOTE 1 Compliance with this Technical Specification does not insure that the sound intensity measuring system is immune to interference from all electromagnetic sources.
- NOTE 2 These requirements are the first attempt at defining electromagnetic and electrostatic compatibility requirements for sound intensity measuring systems. Requirements can be changed later when wider experience has been gained if found necessary.

2 Normative references

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

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

IEC 61000-4-3:2002, Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test Amendment 1 (2002)

IEC 61000-4-20:2010, Electromagnetic compatibility (EMC) – Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides

IEC 61000-6-1:1997, Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 1: Immunity for residential, commercial and light-industrial environments

IEC 61000-6-2:1999, Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments

CISPR/IEC 61000-6-3:1996, Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 3: Emission standard for residential, commercial and light-industrial environments

© IEC 2017

IEC 61043, Electroacoustics - Instruments for the measurement of sound intensity -Measurement with pairs of pressure sensing microphones

CISPR 22:2003, Information technology equipment - Radio disturbance characteristics -Limits and methods of measurement





Edition 1.1 2017-03 CONSOLIDATED VERSION

FINAL VERSION

Electroacoustics – Instruments for the measurement of sound intensity – Electromagnetic and electrostatic compatibility requirements and test procedures



CONTENTS

FO	REWC	PRD	3	
1	Scope			
2	Normative references			
3	Terms and definitions			
4	Electromagnetic and electrostatic compatibility requirements			
	4.1	General	6	
	4.2	Emission limits	7	
	4.3	Electrostatic discharges	7	
	4.4	Immunity to power- and radio-frequency fields and conducted disturbances	7	
5	Test procedures			
	5.1	General	9	
	5.2	Emission measurements	9	
	5.3	Tests for electrostatic discharge	10	
	5.4	Tests for immunity to power- and radio-frequency fields and conducted disturbances	10	
6	Inforr	nation to be included in the instruction manual	11	
Anr	nex A	(informative) Radio-frequency emission limits	12	
Bib	liograp	bhy	13	
		- Limits for radiated disturbance of Class B information technology at (ITE) at a measuring distance of 10 m	12	
		- Limits for conducted disturbance at the mains ports of Class B ITE		

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROACOUSTICS –
INSTRUMENTS FOR THE MEASUREMENT OF SOUND INTENSITY –
ELECTROMAGNETIC AND ELECTROSTATIC COMPATIBILITY
REQUIREMENTS AND TEST PROCEDURES

FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

This consolidated version of the official IEC Standard and its amendment has been prepared for user convenience.

IEC TS 62370 edition 1.1 contains the first edition (2004-05) [documents 29/540/DTS and 29/544A/RVC] and its amendment 1 (2017-03) [documents 29/916/DTS and 29/939/RVDTS].

This Final version does not show where the technical content is modified by amendment 1. A separate Redline version with all changes highlighted is available in this publication.

The main task of IEC technical committees is to prepare International Standards. In exceptional circumstances, a technical committee may propose the publication of a technical specification when

- the required support cannot be obtained for the publication of an International Standard, despite repeated efforts, or
- the subject is still under technical development or where, for any other reason, there is the future but no immediate possibility of an agreement on an International Standard.

Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62370, which is a technical specification, has been prepared by IEC technical committee 29: Electroacoustics.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of the base publication and its amendment will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

ELECTROACOUSTICS – INSTRUMENTS FOR THE MEASUREMENT OF SOUND INTENSITY – ELECTROMAGNETIC AND ELECTROSTATIC COMPATIBILITY REQUIREMENTS AND TEST PROCEDURES

1 Scope

- 1.1 This Technical Specification specifies requirements for instruments that measure sound intensity using pairs of pressure sensing microphones with respect to their immunity to power-and radio-frequency fields and to electrostatic discharge, and the permitted radio-frequency emissions, together with test procedures to verify conformance. Sound intensity measuring instruments are available in many different configurations and may be powered by batteries or from external power supply systems. The technical requirements in this Technical Specification apply to all configurations of instruments for the measurement of sound intensity.
- 1.2 The electromagnetic and electrostatic compatibility requirements are equally applicable for sound intensity measuring instruments used in residential, commercial and light-industrial environments, or industrial sites. The requirements of this Technical Specification are additional to those contained in IEC 61043 and do not alter any of the specifications contained therein. The requirements do not apply retrospectively to sound intensity measuring instruments complying with IEC 61043 prior to the publication of this Technical Specification.
- NOTE 1 Compliance with this Technical Specification does not insure that the sound intensity measuring system is immune to interference from all electromagnetic sources.
- NOTE 2 These requirements are the first attempt at defining electromagnetic and electrostatic compatibility requirements for sound intensity measuring systems. Requirements can be changed later when wider experience has been gained if found necessary.

2 Normative references

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

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

IEC 61000-4-3:2002, Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test Amendment 1 (2002)

IEC 61000-4-20:2010, Electromagnetic compatibility (EMC) – Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides

IEC 61000-6-1:1997, Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 1: Immunity for residential, commercial and light-industrial environments

IEC 61000-6-2:1999, Electromagnetic compatibility (EMC) – Part 6-2: Generic standards – Immunity for industrial environments

CISPR/IEC 61000-6-3:1996, Electromagnetic compatibility (EMC) – Part 6: Generic standards – Section 3: Emission standard for residential, commercial and light-industrial environments

IEC 61043, Electroacoustics – Instruments for the measurement of sound intensity – Measurement with pairs of pressure sensing microphones

CISPR 22:2003, Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement