Irish Standard
I.S. EN 62458:2011

Sound system equipment - Electroacoustic transducers - Measurement of large signal parameters (IEC 62458:2010 (EQV))

I.S. EN 62458:2011

Incorporating amendments/corrigenda issued since publication:

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EUROPEAN STANDARD

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English version

Sound system equipment - Electroacoustic transducers - Measurement of large signal parameters

(IEC 62458:2010)

Equipements pour systèmes électroacoustiques - Transducteurs électroacoustiques - Mesure des paramètres en grand signal (CEI 62458:2010)

Elektroakustische Geräte - Elektroakustische Wandler - Messung von Großsignal-Parametern (IEC 62458:2010)

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CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

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Ref. No. EN 62458:2011 E

Foreword

The text of document 100/1624/FDIS, future edition 1 of IEC 62458, prepared by IEC/TC 100, Audio, video and multimedia systems and equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62458 on 2011-01-02.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN and CENELEC shall not be held responsible for identifying any or all such patent rights.

The following dates were fixed:

– latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2011-10-02
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-01-02

Annex ZA has been added by CENELEC.

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Endorsement notice

The text of the International Standard IEC 62458:2010 was approved by CENELEC as a European Standard without any modification.

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Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60268-1	-	Sound system equipment - Part 1: General	HD 483.1 S2	-
IEC 60268-5	2003	Sound system equipment - Part 5: Loudspeakers	EN 60268-5	2003
A1	2007		A1	2009

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CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

SOUND SYSTEM EQUIPMENT – ELECTROACOUSTICAL TRANSDUCERS – MEASUREMENT OF LARGE SIGNAL PARAMETERS

FOREWORD

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International Standard IEC 62458 has been prepared by IEC technical committee 100: Audio, video and multimedia systems and equipment.

This first edition cancels and replaces IEC/PAS 62458 published in 2006. It constitutes a technical revision. The main changes are listed below:

– descriptions of the methods of measurement are adjusted to the state of the technology;
– addition of Clauses 4 to 15;
– integration of Annex A in the main body of the standard;
– overall textual review.

The text of this standard is based on the following documents:

FDIS	Report on voting
100/1624/FDIS	100/1647/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

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

The committee has decided that the contents of this publication will remain unchanged until the maintenance result 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 publication using a colour printer.

INTRODUCTION

Electro-mechanical-acoustical transducers such as loudspeaker drive units, loudspeaker systems, headphones, micro-speakers, shakers, and other actuators behave in a nonlinear manner at higher amplitudes. This limits the acoustical output and generates nonlinear signal distortion. Linear models fail in describing the large signal behaviour of such transducers and extended models have been developed which consider dominant nonlinearities in the motor and suspension. The free parameters of the large signal model have to be measured on the particular transducer by using static or dynamic methods. The large signal parameters show the physical cause of the signal distortion directly and are very important for the objective assessment of sound quality and failure diagnostics in development and manufacturing. Furthermore, the model and parameters identified for a particular transducer are the basis for predicting the maximum output and signal distortion for any input signal. The close relationship between causes and symptoms simplifies the interpretation of the harmonic and intermodulation distortion measured according to IEC 60268-5. Large signal parameters are valuable input data for the synthesis of loudspeaker systems and the development of electrical control systems dedicated to loudspeakers.