SLOVENSKI STANDARD
SIST EN 60118-13:2011

01-oktober-2011

Elektroakustika - Slušni pripomočki - 13. del: Elektromagnetna združljivost (EMC)

Electroacoustics - Hearing aids - Part 13: Electromagnetic compatibility (EMC)

Akustik - Hörgeräte - Teil 13: Elektromagnetische Verträglichkeit (EMV)

Electroacoustique - Appareils de correction auditive - Partie 13: Compatibilité électromagnétique (CEM)

Ta slovenski standard je istoveten z: **EN 60118-13:2011**

ICS:

11.180.15	Pripomočki za gluhe osebe in osebe z okvaro sluha	Aids for deaf and hearing impaired people
33.100.01	Elektromagnetna združljivost na splošno	Electromagnetic compatibility in general

SIST EN 60118-13:2011 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 60118-13

August 2011

ICS 17.140.50; 33.100.20

Supersedes EN 60118-13:2005

English version

Electroacoustics - Hearing aids - Part 13: Electromagnetic compatibility (EMC)

(IEC 60118-13:2011)

Electroacoustique - Appareils de correction auditive - Partie 13: Compatibilité électromagnétique (CEM) (CEI 60118-13:2011)

Akustik - Hörgeräte - Teil 13: Elektromagnetische Verträglichkeit (EMV) (IEC 60118-13:2011)

This European Standard was approved by CENELEC on 2011-05-16. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

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

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Foreword

The text of document 29/737/FDIS, future edition 3 of IEC 60118-13, prepared by IEC TC 29, Electroacoustics, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 60118-13 on 2011-05-16.

This European Standard supersedes EN 60118-13:2005.

EN 60118-13:2011 introduces a new set of requirements for use of hearing aids with mobile phones.

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)	2012-02-16
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2014-05-16

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and covers essential requirements of EC Directive MDD (93/42/EEC). See Annex ZZ.

Annexes ZA and ZZ have been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 60118-13:2011 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standard indicated:

IEC 60118-4 NOTE Harmonized as EN 60118-4.

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 60118-0	-	Hearing aids - Part 0: Measurement of electroacoustical characteristics	EN 60118-0	-
IEC 60118-2	-	Hearing aids - Part 2: Hearing aids with automatic gain control circuits	EN 60118-2	-
IEC 60118-7	-	Electroacoustics - Hearing aids - Part 7: Measurement of the performance characteristics of hearing aids for production, supply and delivery quality assurance purposes	EN 60118-7	-
IEC 60318-4	-	Electroacoustics - Simulators of human head and ear - Part 4: Occluded-ear simulator for the measurement of earphones coupled to the ear by means of ear inserts	EN 60318-4	-
IEC 60318-5	-	Electroacoustics - Simulators of human head and ear - Part 5: 2 cm³ coupler for the measurement of hearing aids and earphones coupled to the ear by means of ear inserts	EN 60318-5	-
IEC 61000-4-3	-	Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	-
IEC 61000-4-20	-	Electromagnetic compatibility (EMC) - Part 4-20: Testing and measurement techniques - Emission and immunity testing in transverse electromagnetic (TEM) waveguides	EN 61000-4-20	-

Annex ZZ
(informative)

Coverage of Essential Requirements of EC Directives

This European Standard has been prepared under a mandate given to CENELEC by the European Commission and the European Free Trade Association and within its scope the standard covers only the following essential requirements out of those given in Annex I of the EC Directive 93/42/EEC:

– ER 3, only for the aspect of electromagnetic compatibility for performance.

Compliance with this standard provides one means of conformity with the specified essential requirements of the Directive concerned.

WARNING: Other requirements and other EC Directives may be applicable to the products falling within the scope of this standard.

IEC 60118-13

Edition 3.0 2011-04

INTERNATIONAL STANDARD

NORME INTERNATIONALE

colour inside

Electroacoustics – Hearing aids – Part 13: Electromagnetic compatibility (EMC)

Électroacoustique – Appareils de correction auditive – Partie 13: Compatibilité électromagnétique (CEM)

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROACOUSTICS – HEARING AIDS –

Part 13: Electromagnetic compatibility (EMC)

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.
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International Standard IEC 60118-13 has been prepared by IEC technical committee 29: Electroacoustics. It has the status of a product EMC standard in accordance with IEC Guide 107, *Electromagnetic compatibility – Guide to the drafting of electromagnetic compatibility publications*.

This third edition cancels and replaces the second edition published in 2004 and constitutes a technical revision. It introduces a new set of requirements for use of hearing aids with mobile phones.

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

FDIS	Report on voting
29/737/FDIS	29/745/RVD

Full information on the voting for the approval of this International 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.

A list of all parts of the IEC 60118 series, under the general title: *Electroacoustics – Hearing aids*, can be found on the IEC website.

The committee has decided that the contents of this publication 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.

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.

INTRODUCTION

This standard introduces specifications for EMC requirements for hearing aids.

Hearing aids basically consist of a microphone, an amplifier, a induction pick-up coil and a small earphone (receiver). For behind the ear (BTE) hearing aids the sound is often fed to the ear canal by means of an individually made ear mould (ear insert). In the ear (ITE) hearing aids have the active circuitry located in the auditory canal.

The power source normally used is a small battery. On some hearing aids, the user can perform some adjustments of the controls of the hearing aid, which in some cases is by means of a remote control.

The standard only deals with hearing aid immunity, as experience has shown that hearing aids do not emit electromagnetic signals to an extent that can disturb other equipment. Other EMC phenomena, such as RF emission and electrostatic discharge, are not currently known to be a significant problem in connection with hearing aids. Based on new knowledge, they could be considered in connection with future revisions or extensions of this standard. Hearing aids containing RF transmitting equipment are covered by this standard regarding immunity, however the RF transmitting equipment is not covered. Experience in connection with the use of hearing aids in recent times has identified digital wireless devices, such as DECT wireless phones and GSM mobile phones as potential sources of disturbance for hearing aids. Interference in hearing aids depends on the emitted power from the wireless telephone as well as the immunity of the hearing aid. The performance criteria in this standard will not totally ensure hearing aid users interference- and noise-free use of wireless telephones but will establish useable conditions in most situations. In practice a hearing aid user, when using a digital wireless device, will seek, if possible, to find a position on the ear which gives a minimum or no interference in the hearing aid.

Hearing aids are battery powered devices, and therefore disturbances related to a.c. or d.c. power inputs are not relevant and are therefore not considered in this standard.

Hearing aids whose outputs are non-acoustic, e.g. cochlear implants and bone conduction hearing aids, are not covered by this standard.

In some cases, hearing aids are connected to other equipment by cable, but this standard does not cover common mode transients and common mode surges on such cable connections.

Based on experience in connection with the use of hearing aids, relevant sources of disturbance for hearing aids include low frequency radiated magnetic fields, which may interact with the induction pick-up coil input included in some hearing aids. As the induction pick-up coil input is an intended feature of some hearing aids, and the hearing aid therefore must have a certain sensitivity to low frequency magnetic fields, it is not relevant to specify immunity against disturbing low frequency magnetic fields. To avoid unintended interference from low frequency magnetic noise fields, the recommendations specified in IEC 60118-4 [1][1], regarding specifications for induction loop systems, should be followed.

With regard to high frequency radiated electromagnetic fields originating from RF wireless devices such as digital mobile telephone systems, only sources of disturbance which are currently known to be a problem in connection with hearing aids are covered. Reference is made to IEC 61000-4-3, which identifies digital radio telephone systems operating in the frequency ranges 0,8 GHz to 0,96 GHz and 1,4 GHz to 2,48 GHz to be potential sources of interference. Future versions may add tests for other frequency bands, as they come into more common use. Hearing aids are used in all environments as outlined in IEC 61000-4-3.

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1 Figures in square brackets refer to the bibliography.