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Exponering för radiofrekventa elektromagnetiska fält från handhållen och kroppsburen trådlös kommunikationsutrustning – Kroppsmodeller, instrumentering, och metoder – Del 2: Bestämning av specifik absorptionshastighet (SAR) för apparater som används nära kroppen (frekvensområde 30 MHz till 3 GHz)

Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures –

Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)

Som svensk standard gäller europastandarden EN 62209-2:2010. Den svenska standarden innehåller den officiella engelska språkversionen av EN 62209-2:2010.

Nationellt förord

Europastandarden EN 62209-2:2010

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 62209-2, First edition, 2010 - Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)**

utarbetad inom International Electrotechnical Commission, IEC.

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**Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices -
Human models, instrumentation, and procedures -
Part 2: Procedure to determine the specific absorption rate (SAR)
for wireless communication devices used in close proximity to the human
body (frequency range of 30 MHz to 6 GHz)
(IEC 62209-2:2010)**

Exposition humaine aux champs radio
fréquence produits par les dispositifs
de communications sans fils tenus à la
main ou portés près du corps -
Modèles du corps humain, instrumentation
et procédures -
Partie 2: Procédure pour la détermination
du débit d'absorption spécifique produit
par les dispositifs de communications
sans fils utilisés très près du corps humain
(gamme de fréquence de 30 MHz
à 6 GHz)
(CEI 62209-2:2010)

Sicherheit von Personen
in hochfrequenten Feldern
von handgehaltenen und am Körper
getragenen schnurlosen
Kommunikationsgeräten – Körpermodelle,
Messgeräte und Verfahren – Teil 2:
Verfahren zur Bestimmung
der spezifischen Absorptionsrate (SAR)
von schnurlosen Kommunikationsgeräten,
die in enger Nachbarschaft
zum menschlichen Körper verwendet
werden (Frequenzbereich von 30 MHz
bis 6 GHz)
(IEC 62209-2:2010)

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CENELEC

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

Management Centre: Avenue Marnix 17, B - 1000 Brussels

Foreword

The text of document 106/195/FDIS, future edition 1 of IEC 62209-1, prepared by IEC TC 106, Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 62209-2 on 2010-06-01.

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) 2011-03-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2013-06-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 62209-2:2010 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

- [30] IEC 62311:2007 NOTE Harmonized as EN 62311:2008 (modified).
- [31] IEC 62479 NOTE Harmonized as EN 62479.
- [34] ISO 10012:2003 NOTE Harmonized as EN ISO 10012:2003 (not modified).

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.

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 62209-1	2005	Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures - Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)	EN 62209-1	2006
ISO/IEC 17025	2005	General requirements for the competence of testing and calibration laboratories	EN ISO/IEC 17025	2005

CONTENTS

INTRODUCTION.....	7
1 Scope.....	8
2 Normative references	8
3 Terms and definitions	9
4 Symbols and abbreviated terms.....	12
4.1 Physical quantities	12
4.2 Constants.....	12
4.3 Abbreviations	12
5 Measurement system specifications	13
5.1 General requirements.....	13
5.2 Phantom specifications – shell and liquid	14
5.2.1 General requirements	14
5.2.2 Phantom material, shape and size	14
5.2.3 Tissue-equivalent liquid material properties	15
5.3 Measurement instrumentation system specifications	17
5.3.1 General requirements.....	17
5.3.2 Scanning system	17
5.3.3 Probes.....	17
5.3.4 Probe calibration	17
5.3.5 Specifications for fixture(s) to hold the DUT in the test position	17
6 Protocol for SAR evaluation.....	18
6.1 Measurement preparation.....	18
6.1.1 General preparation.....	18
6.1.2 System check	18
6.1.3 Preparation of the device under test	18
6.1.4 Position of the device under test in relation to the phantom	20
6.1.5 Test frequencies.....	30
6.2 Tests to be performed	30
6.2.1 General requirements	30
6.2.2 Test reductions.....	30
6.2.3 General test procedure.....	31
6.2.4 Fast SAR evaluations	32
6.3 Measurement procedure.....	34
6.3.1 General procedure.....	34
6.3.2 Procedures for testing of DUTs with simultaneous multi-band transmission	35
6.4 Post-processing	37
6.4.1 Interpolation	37
6.4.2 Probe offset extrapolation.....	37
6.4.3 Definition of averaging volume.....	37
6.4.4 Searching for the maxima.....	38
7 Uncertainty estimation	38
7.1 General considerations.....	38
7.1.1 Concept of uncertainty estimation.....	38
7.1.2 Type A and type B evaluations	38

7.1.3	Degrees of freedom and coverage factor	39
7.2	Components contributing to uncertainty	40
7.2.1	General	40
7.2.2	Contribution of the measurement system (probe and associated electronics).....	40
7.2.3	Contribution of mechanical constraints	46
7.2.4	Contribution of physical parameters.....	49
7.2.5	Contribution of post-processing	53
7.2.6	Standard source offset and tolerance	57
7.3	Uncertainty estimation.....	58
7.3.1	Combined and expanded uncertainties	58
7.3.2	Maximum expanded uncertainty	58
8	Measurement report	64
8.1	General.....	64
8.2	Items to be recorded in the measurement report.....	64
Annex A (informative)	Phantom rationale	66
Annex B (normative)	SAR measurement system verification	69
Annex C (informative)	Fast SAR testing	78
Annex D (informative)	Standard sources and phantoms for system validation	80
Annex E (informative)	Example recipes for phantom tissue-equivalent liquids.....	86
Annex F (normative)	SAR correction for deviations of complex permittivity from targets.....	89
Annex G (informative)	Hands-free kit testing.....	91
Annex H (informative)	Skin enhancement factor.....	94
Annex I (informative)	Tissue-equivalent liquid dielectric property measurements and measurement uncertainty estimation.....	98
Annex J (informative)	Testing compliance for the exposure of the hand	100
Annex K (informative)	Test reduction	102
Annex L (normative)	Power scaling procedure	104
Annex M (informative)	Rationale for probe parameters	106
Bibliography	108
Figure 1	– Dimensions of the elliptical phantom	15
Figure 2	– Definition of reference points	21
Figure 3	– Measurements by shifting of the device at the phantom	22
Figure 4	– Test positions for a generic device	23
Figure 5	– Test positions for body-worn devices	24
Figure 6	– Device with swivel antenna (example of desktop device).....	24
Figure 7	– Test positions for body supported devices.....	26
Figure 8	– Test positions for desktop devices	27
Figure 9	– Test positions for front-of-face devices.....	28
Figure 10	– Test position for limb-worn devices	29
Figure 11	– Test position for clothing-integrated wireless devices	30
Figure 12	– Block diagram of the tests to be performed	33
Figure 13	– Orientation of the probe with respect to the normal of the phantom surface.....	35
Figure B.1	– Set-up for the system check.....	71

Figure D.1 – Mechanical details of the reference dipole	82
Figure D.2 – Dimensions of the flat phantom set-up used for deriving the minimal dimensions for W and L	83
Figure D.3 – FDTD predicted uncertainty in the 10 g peak spatial-average SAR as a function of the dimensions of the flat phantom compared with an infinite flat phantom	84
Figure D.4 – Standard waveguide source.....	85
Figure G.1 – Configuration of a wired personal hands-free headset	91
Figure G.2 – Configuration without a wired personal hands-free headset	92
Figure H.1 – SAR and temperature increase (ΔT) distributions simulated for a three-layer (skin, fat, muscle) planar torso model.....	94
Figure H.2 –Statistical approach to protect 90 % of the population.....	95
Figure H.3 – Spatial-average SAR skin enhancement factors.....	96
Figure J.1 – Test position for hand-held devices, not used at the head or torso	100
Table 1 – Dielectric properties of the tissue-equivalent liquid material	16
Table 2 – Example uncertainty template and example numerical values for relative permittivity (ϵ'_r) and conductivity (σ) measurement; separate tables may be needed for each ϵ'_r and σ	50
Table 3 – Parameters for reference function f_1	54
Table 4 – Reference SAR values in watts per kilogram used for estimating post-processing uncertainties	55
Table 5 – Measurement uncertainty evaluation template for DUT SAR test	59
Table 6 – Measurement uncertainty evaluation template for system validation	61
Table 7 – Measurement uncertainty evaluation template for system repeatability	63
Table B.1 – Numerical reference SAR values for reference dipoles and flat phantom – All values are normalized to a forward power of 1 W.....	76
Table B.2 – Numerical reference SAR values for reference matched waveguides in contact with flat phantom (from reference [53])	77
Table D.1 – Mechanical dimensions of the reference dipoles	81
Table D.2 – Parameters used for calculation of reference SAR values in Table B.1	84
Table D.3 – Mechanical dimensions of the standard waveguide	85
Table E.1 – Suggested recipes for achieving target dielectric parameters	87
Table F.1 – Root-mean-squared error of Equations (F.1) to (F.3) as a function of the maximum change in permittivity or conductivity [13].....	90
Table H.1 – Spatial-average SAR correction factors.....	96
Table I.1 – Parameters for calculating the dielectric properties of various reference liquids.....	98
Table I.2 – Dielectric properties of reference liquids at 20 °C	99
Table M.1 – Minimum probe requirements as a function of frequency and parameters of the tissue equivalent liquid.....	106
Table M.2 – Extrapolation and integration uncertainty of the 10 g peak spatial average SAR ($k=2$) for homogeneous and graded meshes	107

INTRODUCTION

The IEC work item “Evaluation of the Human Exposure to Radio Fields from Hand-Held and Body-Mounted Wireless Communication Devices in the Frequency range 30 MHz to 6 GHz (Human Models, Instrumentation, Procedures),” has the objective to measure the human exposure from devices intended to be used at a position near the human body. This standard was developed to provide procedures to evaluate exposures due to any electromagnetic field (EMF) transmitting device when held in the hand or in front of the face, mounted on the body, combined with other transmitters within a product, or embedded in garments. The types of devices dealt with include but are not limited to mobile telephones, cordless telephones, cordless microphones, auxiliary broadcast devices and radio transmitters in personal computers. For transmitters used in close proximity to the human ear, specific absorption rate (SAR) measurements should be performed using the procedures of IEC 62209-1:2005.

TC 106 has the scope to prepare international standards on measurement and calculation methods used to assess human exposure to electric, magnetic and electromagnetic fields. The task includes assessment methods for the exposure produced by specific sources. It applies to basic restrictions and reference levels. Although the establishment of exposure limits is not within the scope of TC 106, the results of assessments performed in accordance with TC 106 standards can be compared with the basic restrictions of relevant standards and guidelines. Conformity assessment depends on the policy of national regulatory bodies.

A Category D liaison in IEC involves organizations that can make an effective technical contribution and participate at the working group level or specific project level of the IEC technical committees or subcommittees. Obvious goals are standards harmonization and minimizing duplication of effort. The work of IEC technical committee 106 (TC 106) and IEEE International Committee on Electromagnetic Safety (ICES SCC39), technical committee 34 (TC 34), is an example where two international committees worked together informally through common membership to achieve the goal of harmonization, specifically between IEC Project Team 62209 (PT 62209) on the “Procedure to Measure the Specific Absorption Rate (SAR) for Hand-Held Mobile Telephones” and IEEE/SCC39-ICES/TC34 on IEEE Std 1528-2003 “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques” [32].¹

IEEE/SCC39-ICES/TC34 has a similar project. Because the project is more advanced in IEC, a Category D liaison was sought in order to avoid divergence of standards and duplication of work. Thus, rather than developing two separate standards (IEC and IEEE), the IEEE committee felt it would be more efficient to develop a single IEC standard with direct input from the members of IEEE/SCC39-ICES/TC34, many of whom are also members of PT 62209 or are from the same organizations that send delegates to participate in the work of PT 62209. The Category D liaison is limited only to this project (Part 2 of IEC 62209 series).

¹ Figures in square brackets refer to the Bibliography.

HUMAN EXPOSURE TO RADIO FREQUENCY FIELDS FROM HAND-HELD AND BODY-MOUNTED WIRELESS COMMUNICATION DEVICES – HUMAN MODELS, INSTRUMENTATION, AND PROCEDURES –

Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)

1 Scope

This part of IEC 62209 series is applicable to any wireless communication device capable of transmitting electromagnetic fields (EMF) intended to be used at a position near the human body, in the manner described by the manufacturer, with the radiating part(s) of the device at distances up to and including 200 mm from a human body, i.e. when held in the hand or in front of the face, mounted on the body, combined with other transmitting or non-transmitting devices or accessories (e.g. belt-clip, camera or Bluetooth add-on), or embedded in garments. For transmitters used in close proximity to the human ear, the procedures of IEC 62209-1:2005 are applicable.

This standard is applicable for radio frequency exposure in the frequency range of 30 MHz to 6 GHz, and may be used to measure simultaneous exposures from multiple radio sources used in close proximity to human body. Definitions and evaluation procedures are provided for the following general categories of device types: body-mounted, body-supported, desktop, front-of-face, hand-held, laptop, limb-mounted, multi-band, push-to-talk, clothing-integrated. The types of devices considered include but are not limited to mobile telephones, cordless microphones, auxiliary broadcast devices and radio transmitters in personal computers.

This International Standard gives guidelines for a reproducible and conservative measurement methodology for determining the compliance of wireless devices with the SAR limits.

Because studies suggest that exclusion of features to represent a hand in human models constitutes a conservative case scenario for SAR in the trunk and the head, a representation of a hand is not included if the device is intended to be used next to the head or supported on or near the torso [73], [80]. This standard does not apply for exposures from transmitting or non-transmitting implanted medical devices. This standard does not apply for exposure from devices at distances greater than 200 mm away from the human body.

IEC 62209-2 makes cross-reference to IEC 62209-1:2005 where complete clauses or subclauses apply, along with any changes specified.

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 62209-1:2005, *Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 1: Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)*

