ICS 17.220.20 SLOVENSKÁ TECHNICKÁ NORMA Február 2022

STN	**Postupy merania na posúdenie špecifickej miery absorpcie pri vystavení človeka účinkom vysokofrekvenčných polí z bezdrôtových komunikačných ručných zariadení a zariadení upevnených na tele Časť 1528: Ľudské modely, prístrojové vybavenie a postupy (frekvenčný rozsah od 4 MHz do 10 GHz)**	**STN EN IEC/IEEE 62209-1528** 36 7080

Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)

Táto norma obsahuje anglickú verziu európskej normy.
This standard includes the English version of the European Standard.

Táto norma bola oznámená vo Vestníku ÚNMS SR č. 01/22

Obsahuje: EN IEC/IEEE 62209-1528:2021, IEC/IEEE 62209-1528:2020

Oznámením tejto normy sa od 19.11.2024 ruší
STN EN 62209-1 (36 7080) z apríla 2017

STN EN 62209-2 (36 7080) z októbra 2010

obsahuje farebné strany

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EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC/IEEE 62209-1528

November 2021

ICS 17.220.20

Supersedes EN 62209-1:2016, EN 62209-2:2010 and all of its amendments and corrigenda (if any)

English Version

Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz) (IEC/IEEE 62209-1528:2020)

Procédure de mesure pour l'évaluation du débit d'absorption spécifique de l'exposition humaine aux champs radiofréquence produits par les dispositifs de communications sans fil tenus à la main ou portés près du corps - Partie 1528: Modèles humain, instrumentation et procédures (Plage de fréquences comprise entre 4 MHz et 10 GHz)
(IEC/IEEE 62209-1528:2020)

Messverfahren für die Beurteilung der spezifischen Absorptionsrate bei der Exposition von Personen gegenüber hochfrequenten Feldern von handgehaltenen und am Körper getragenen schnurlosen Kommunikationsgeräten - Teil 1528: Körpermodelle, Messgeräte und -verfahren (Frequenzbereich von 4 MHz bis 10 GHz)
(IEC/IEEE 62209-1528:2020)

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

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

Ref. No. EN IEC/IEEE 62209-1528:2021 E

European foreword

This document (EN IEC/IEEE 62209-1528:2021) consists of the text of IEC/IEEE 62209-1528:2020 prepared by IEC/TC 106 "Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure".

The following dates are fixed:

• latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement	(dop)	2022-05-19
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2024-11-19

This document supersedes EN 62209-1:2016 and EN 62209-2:2010 and all of their amendments and corrigenda (if any).

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Endorsement notice

The text of the International Standard IEC/IEEE 62209-1528:2020 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:

ISO/IEC 17025:2017	NOTE	Harmonized as EN ISO/IEC 17025:2017 (not modified)
IEC 62479:2010	NOTE	Harmonized as EN 62479:2010 (modified)
IEC 62311:2019	NOTE	Harmonized as EN IEC 62311:2020 (not modified)
IEC 60154-2	NOTE	Harmonized as EN 60154-2
ISO 10012:2003	NOTE	Harmonized as EN ISO 10012:2003 (not modified)
ISO/IEC 17043:2010	NOTE	Harmonized as EN ISO/IEC 17043:2010 (not modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu.

Publication	Year	Title	EN/HD	Year
IEC 62209-3	2019	Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 3: Vector measurement-based systems (Frequency range of 600 MHz to 6 GHz)	EN IEC 62209-3	2019
ISO/IEC Guide 98-3	2008	Uncertainty of measurement - Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)	-	-

IEC/IEEE 62209-1528

Edition 1.0 2020-10

INTERNATIONAL STANDARD

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Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices –
Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)

IEC/IEEE 62209-1528:2020-10(en)

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IEC Glossary - std.iec.ch/glossary
67 000 electrotechnical terminology entries in English and French extracted from the Terms and definitions clause of IEC publications issued between 2002 and 2015. Some entries have been collected from earlier publications of IEC TC 37, 77, 86 and CISPR.

IEC/IEEE 62209-1528

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INTERNATIONAL STANDARD

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Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices –
Part 1528: Human models, instrumentation, and procedures
(Frequency range of 4 MHz to 10 GHz)

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MEASUREMENT PROCEDURE FOR THE ASSESSMENT OF SPECIFIC ABSORPTION RATE OF HUMAN EXPOSURE TO RADIO FREQUENCY FIELDS FROM HAND-HELD AND BODY-MOUNTED WIRELESS COMMUNICATION DEVICES –

Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)

FOREWORD

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International Standard IEC/IEEE 62209-1528 has been prepared by IEC technical committee 106: Methods for the assessment of electric, magnetic and electromagnetic fields associated with human exposure, in cooperation with the International Committee on Electromagnetic Safety of the IEEE Standards Association, under the IEC/IEEE Dual Logo Agreement.

This first edition of IEC/IEEE 62209-1528 cancels and replaces IEC 62209-1:2016, IEC 62209-2:2010, IEC 62209-2:2010/AMD1:2019 and IEEE Std 1528-2013. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

a) extension of the frequency range down to 4 MHz and up to 10 GHz;
b) testing of devices with proximity sensors;
c) application specific phantoms;
d) device holder specifications;
e) fast SAR testing procedures;
f) test reduction procedures;
g) LTE assessment procedure;
h) revision of validation clause, including validation antennas;
i) revision of SAR assessment procedure;
j) time-average SAR measurement procedure;
k) uncertainty analysis;

This publication is published as an IEC/IEEE Dual Logo standard.

This publication contains attached files in the form of the Fast SAR Wizard described in 7.9.2.2 as well as CAD files for the SAM phantom. These files are available at:

http://www.iec.ch/dyn/www/f?p=103:227:0::::FSP_ORG_ID,FSP_LANG_ID:1303,25.

These files are intended to be used as a complement and do not form an integral part of the publication.

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

FDIS	Report on voting
106/514/FDIS	106/520/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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The IEC Technical Committee and IEEE Technical Committee have 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

The objective of this document is to provide procedures for measuring the human exposure from devices intended to be used at a position near the human head or body. It was developed to provide procedures to evaluate electromagnetic field (EMF) exposures due to radio frequency (RF) transmitting devices used next to the ear, in front of the face, mounted on the body, operating in conjunction with other RF-transmitting and non-transmitting devices or accessories (e.g. belt-clips), or embedded in garments. The types of devices dealt with include but are not limited to mobile telephones, cordless telephones, cordless microphones, and radio transmitters in personal computers. The applicable frequency range is from 4 MHz to 10 GHz. The document defines:

– measurement system requirements (Clause 6),
– SAR measurement protocols (Clause 7),
– SAR measurement uncertainty evaluation (Clause 8), and
– reporting requirements (Clause 9).

At the time this document was developed, two computational and measurement joint IEC/IEEE projects dealing with millimetre-wave power density assessment were under development, covering the frequency range from 6 GHz to 300 GHz. Hence there is an overlap of frequency between this document, which deals with SAR, and the other joint IEC/IEEE projects dealing with power density from 6 GHz to 10 GHz. The IEC/IEEE joint working group was aware of this fact and believed that it would give the flexibility of using whatever metrics suitable for the considered case of compliance assessment.

MEASUREMENT PROCEDURE FOR THE ASSESSMENT OF SPECIFIC ABSORPTION RATE OF HUMAN EXPOSURE TO RADIO FREQUENCY FIELDS FROM HAND-HELD AND BODY-MOUNTED WIRELESS COMMUNICATION DEVICES –

Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 GHz)

1 Scope

This document specifies protocols and test procedures for the reproducible and repeatable measurement of the conservative exposure peak spatial average SAR (psSAR) induced inside a simplified model of the head and the body by radio-frequency (RF) transmitting devices, with a defined measurement uncertainty. These protocols and procedures apply to a significant majority of the population, including children, during the use of hand-held and body-worn wireless communication devices. These devices include single or multiple transmitters or antennas, and are operated with their radiating structure(s) at distances up to 200 mm from a human head or body. This document is employed to evaluate SAR compliance of different types of wireless communication devices used next to the ear, in front of the face, mounted on the body, operating in conjunction with other RF-transmitting, non-transmitting devices or accessories (e.g. belt-clips), or embedded in garments. The applicable frequency range is from 4 MHz to 10 GHz. Devices operating in the applicable frequency range can be tested using the phantoms and other requirements defined in this document.

The device categories covered include, but are not limited to, mobile telephones, cordless microphones, and radio transmitters in personal, desktop and laptop computers, for multi-band operations using single or multiple antennas, including push-to-talk devices. This document can also be applied for wireless power transfer devices operating above 4 MHz.

This document does not apply to implanted medical devices.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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 62209-3:2019, *Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Part 3: Vector measurement-based systems (Frequency range of 600 MHz to 6 GHz.*

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*