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Specifikacija merilnih naprav in metod za merjenje radiofrekvenčnih motenj in odpornosti - 1-4. del: Merilne naprave za merjenje radiofrekvenčnih motenj in odpornosti - Antene in preskuševališča za meritve sevanih motenj (CISPR 16-1-4:2010)

iTeh STANDARD PREVIEW

Specification for radio disturbance and immunity measuring apparatus and methods -
Part 1-4: Radio disturbance and immunity measuring apparatus - Antennas and test sites
for radiated disturbance measurements

SIST EN 55016-1-4:2011

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Anforderungen an Geräte und Einrichtungen sowie Festlegung der Verfahren zur Messung der hochfrequenten Störaussendung (Funkstörungen) und Störfestigkeit - Teil 1-4: Geräte und Einrichtungen zur Messung der hochfrequenten Störaussendung (Funkstörungen) und Störfestigkeit - Zusatz-/Hilfseinrichtungen - Gestrahlte Störaussendung

Spécifications des méthodes et des appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques - Partie 1-4: Appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques - Antennes et emplacements d'essai pour les mesures des perturbations rayonnées

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English version

**Specification for radio disturbance and immunity measuring apparatus
and methods -**

**Part 1-4: Radio disturbance and immunity measuring apparatus -
Antennas and test sites for radiated disturbance measurements
(CISPR 16-1-4:2010)**

Spécifications des méthodes
et des appareils de mesure
des perturbations radioélectriques
et de l'immunité aux perturbations
radioélectriques -
Partie 1-4: Appareils de mesure
des perturbations radioélectriques
et de l'immunité aux perturbations
radioélectriques -
Antennes et emplacements d'essai
pour les mesures des perturbations
rayonnées
(CISPR 16-1-4:2010)

Anforderungen an Geräte
und Einrichtungen sowie Festlegung
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der hochfrequenten Störaussendung
(Funkstörungen) und Störfestigkeit -
Teil 1-4: Geräte und Einrichtungen
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Störaussendung (Funkstörungen)
und Störfestigkeit -
Zusatz-/Hilfseinrichtungen -
Gestrahlte Störaussendung
(CISPR 16-1-4:2010)

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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.

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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 CISPR/A/885/FDIS, future edition 3 of CISPR 16-1-4, prepared by CISPR SC A, Radio-interference measurements and statistical methods, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 55016-1-4 on 2010-06-01.

This European Standard supersedes EN 55016-1-4:2007 + A1:2008 + A2:2009.

This EN 55016-1-4:2010 includes the following significant technical change with respect to EN 55016-1-4:2007 + A1:2008 + A2:2009: provisions are added to address evaluation of a set-up table in the frequency range above 1 GHz.

It has the status of a basic EMC publication in accordance with IEC Guide 107, *Electromagnetic compatibility – Guide to the drafting of electromagnetic compatibility publications*.

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.

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Endorsement notice

The text of the International Standard CISPR 16-1-4:2010 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:

[1] IEC 61169-8 NOTE Harmonized as EN 61169-8.

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>
CISPR 16-1-1	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-1: Radio disturbance and immunity measuring apparatus - Measuring apparatus	EN 55016-1-1	-
CISPR 16-1-5	2003	Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-5: Radio disturbance and immunity measuring apparatus - Antenna calibration test sites for 30 MHz to 1 000 MHz	EN 55016-1-5	2004
CISPR 16-2-3	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 2-3: Methods of measurement of disturbances and immunity - Radiated disturbance measurements	EN 55016-2-3	-
CISPR/TR 16-3 + A1 + A2	2003 2005 2006	Specification for radio disturbance and immunity measuring apparatus and methods - Part 3: CISPR technical reports	-	-
CISPR 16-4-2	-	Specification for radio disturbance and immunity measuring apparatus and methods - Part 4-2: Uncertainties, statistics and limit modelling - Uncertainty in EMC measurements	EN 55016-4-2	-
IEC 60050-161	-	International Electrotechnical Vocabulary (IEV) - Chapter 161: Electromagnetic compatibility	-	-
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	-

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COMITÉ INTERNATIONAL SPÉCIAL DES PERTURBATIONS RADIOÉLECTRIQUES

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Itch STANDARD PREVIEW
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Part 1-4: Radio disturbance and immunity measuring apparatus – Antennas and test sites for radiated disturbance measurements

**Spécifications des méthodes et des appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques –
Partie 1-4: Appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques – Antennes et emplacements d'essai pour les mesures des perturbations rayonnées**

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CONTENTS

FOREWORD.....	6
1 Scope.....	8
2 Normative references.....	8
3 Terms, definitions and abbreviations	9
3.1 Terms and definitions	9
3.2 Abbreviations.....	12
4 Antennas for measurement of radiated radio disturbance	12
4.1 General	12
4.2 Physical parameter for radiated emission measurements	12
4.3 Frequency range 9 kHz to 150 kHz	13
4.3.1 General	13
4.3.2 Magnetic antenna	13
4.3.3 Shielding of loop antenna.....	13
4.4 Frequency range 150 kHz to 30 MHz.....	13
4.4.1 Electric antenna	13
4.4.2 Magnetic antenna	14
4.4.3 Balance/cross-polar performance of antennas	14
4.5 Frequency range 30 MHz to 1 000 MHz.....	14
4.5.1 General	14
4.5.2 Low-uncertainty antenna for use if there is an alleged non-compliance to the <i>E</i> -field limit.....	14
4.5.3 Antenna characteristics.....	14
4.5.4 Balance of antenna	16
4.5.5 Cross-polar response of antenna	18
4.6 Frequency range 1 GHz to 18 GHz.....	18
4.7 Special antenna arrangements – Loop antenna system	19
5 Test sites for measurement of radio disturbance field strength for the frequency range of 30 MHz to 1 000 MHz	19
5.1 General	19
5.2 OATS	19
5.2.1 General	19
5.2.2 Weather protection enclosure	20
5.2.3 Obstruction-free area	20
5.2.4 Ambient radio frequency environment of a test site.....	21
5.2.5 Ground plane	22
5.2.6 OATS validation procedure	22
5.3 Test site suitability for other ground-plane test sites	26
5.3.1 General	26
5.3.2 Normalized site attenuation for alternative test sites	26
5.3.3 Site attenuation.....	30
5.3.4 Conducting ground plane	30
5.4 Test site suitability without ground plane	31
5.4.1 Measurement considerations for free space test sites, as realized by fully-absorber-lined shielded enclosures.....	31
5.4.2 Site performance	32
5.4.3 Site validation criteria.....	40
5.5 Evaluation of set-up table and antenna tower	40

5.5.1	General	40
5.5.2	Evaluation procedure for set-up table influences	40
6	Reverberating chamber for total radiated power measurement	42
6.1	General	42
6.2	Chamber	42
6.2.1	Chamber size and shape.....	42
6.2.2	Door, openings in walls, and mounting brackets	42
6.2.3	Stirrers	43
6.2.4	Test for the efficiency of the stirrers	43
6.2.5	Coupling attenuation	44
7	TEM cells for immunity to radiated disturbance measurement.....	45
8	Test sites for measurement of radio disturbance field strength for the frequency range 1 GHz to 18 GHz.....	45
8.1	General	45
8.2	Reference test site	45
8.3	Validation of the test site.....	45
8.3.1	General	45
8.3.2	Acceptance criterion for site validation	46
8.3.3	Site validation procedures – evaluation of S_{VSWR}	47
8.4	Alternative test sites	59
9	Common mode absorption devices.....	59
9.1	General	59
9.2	CMAD S -parameter measurements	59
9.3	CMAD test jig	59
9.4	Measurement method using the TRL calibration.....	61
9.5	Specification of ferrite clamp-type CMAD.....	63
9.6	CMAD performance (degradation) check using spectrum analyzer and tracking generator	63
Annex A	(normative) Parameters of antennas.....	66
Annex B	(normative) Monopole (1 m rod) antenna performance equations and characterization of the associated antenna matching network	73
Annex C	(normative) Loop antenna system for magnetic field induced-current measurements in the frequency range of 9 kHz to 30 MHz.....	78
Annex D	(normative) Construction details for open area test sites in the frequency range of 30 MHz to 1 000 MHz (see Clause 5).....	87
Annex E	(normative) Validation procedure of the open area test site for the frequency range of 30 MHz to 1 000 MHz (see Clause 5).....	91
Annex F	(informative) Basis for 4 dB site acceptability criterion (see Clause 5)	99
Bibliography	101
Figure 1	– Schematic of radiation from EUT reaching an LPDA antenna directly and via ground reflections on a 3 m site, showing the half beamwidth, φ , at the reflected ray.....	15
Figure 2	– Obstruction-free area of a test site with a turntable (see 5.2.3).....	21
Figure 3	– Obstruction-free area with stationary EUT (see 5.2.3)	21
Figure 4	– Configuration of equipment for measuring site attenuation in horizontal polarization (see 5.2.6 and Annex E)	23
Figure 5	– Configuration of equipment for measuring site attenuation in vertical polarization using tuned dipoles (see 5.2.6 and Annex E).....	24

Figure 6 – Typical antenna positions for alternative test site – Vertical polarization NSA measurements	28
Figure 7 – Typical antenna positions for alternative test site – Horizontal polarization NSA measurements	28
Figure 8 – Typical antenna positions for alternative test site – Vertical polarization NSA measurements for a smaller EUT	29
Figure 9 – Typical antenna positions for alternative test site – Horizontal polarization NSA measurements for a smaller EUT	29
Figure 10 – Graph of theoretical free-space NSA as a function of the frequency for different measurement distances (see Equation (10))	33
Figure 11 – Measurement positions for the site validation procedure	35
Figure 12 – Example of one measurement position and antenna tilt for the site validation procedure	36
Figure 13 – Typical free-space reference site attenuation measurement set-up	39
Figure 14 – Position of the antenna relative to the edge above a rectangle set-up table (top view)	42
Figure 15 – Antenna position above the set-up table (side view)	42
Figure 16 – Example of a typical paddle stirrer	43
Figure 17 – Range of coupling attenuation as a function of frequency for a chamber using the stirrer shown in Figure 16	44
Figure 18 – Transmit antenna <i>E</i> -plane radiation pattern example (this example is for informative purposes only)	48
Figure 19 – Transmit antenna <i>H</i> -plane radiation pattern (this example is for informative purposes only)	49
Figure 20 – S_{VSWR} measurement positions in a horizontal plane (see 8.3.3.2.2 for description)	50
Figure 21 – S_{VSWR} positions (height requirements)	52
Figure 22 – Conditional test position requirements	58
Figure 23 – Definition of the reference planes inside the test jig	60
Figure 24 – The four configurations for the TRL calibration	62
Figure 25 – Limits for the magnitude of S_{11} , measured according to provisions of 9.1 to 9.3	63
Figure 26 – Example of a 50 Ω adaptor construction in the vertical flange of the jig	64
Figure 27 – Example of a matching adaptor with balun or transformer	65
Figure 28 – Example of a matching adaptor with resistive matching network	65
Figure A.1 – Short dipole antenna factors for $R_L = 50 \Omega$	69
Figure B.1 – Method using network analyzer	75
Figure B.2 – Method using measuring receiver and signal generator	76
Figure B.3 – Example of capacitor mounting in dummy antenna	76
Figure C.1 – The loop-antenna system, consisting of three mutually perpendicular large-loop antennas	79
Figure C.2 – A large-loop antenna containing two opposite slits, positioned symmetrically with respect to the current probe C	80
Figure C.3 – Construction of the antenna slit	81
Figure C.4 – Example of antenna-slit construction using a strap of printed circuit board to obtain a rigid construction	81
Figure C.5 – Construction for the metal box containing the current probe	82
Figure C.6 – Example showing the routing of several cables from an EUT to ensure that there is no capacitive coupling from the leads to the loop	82

Figure C.7 – The eight positions of the balun-dipole during validation of the large-loop antenna	83
Figure C.8 – Validation factor for a large loop-antenna of 2 m diameter	83
Figure C.9 – Construction of the balun-dipole	84
Figure C.10 – Conversion factors C_{dA} [for conversion into dB(μ A/m)] and C_{dV} (for conversion into dB(μ V/m)) for two standardized measuring distances d	85
Figure C.11 – Sensitivity S_D of a large-loop antenna with diameter D relative to a large-loop antenna having a diameter of 2 m	85
Figure D.1 – The Rayleigh criterion for roughness in the ground plane	88
Table 1 – Normalized site attenuation (recommended geometries for tuned half-wave dipoles with horizontal polarization)	30
Table 2 – Normalized site attenuation* (recommended geometries for broadband antennas).....	31
Table 3 – Maximum dimensions of test volume versus test distance	34
Table 4 – Frequency ranges and step sizes	36
Table 5 – S_{VSWR} test position designations.....	53
Table 6 – S_{VSWR} reporting requirements.....	58
Table E.1 – Normalized site attenuation ^a – Recommended geometries for broadband antennas.....	95
Table E.2 – Normalized site attenuation – Recommended geometries for tuned half-wave dipoles, horizontal polarization.....	96
Table E.3 – Normalized site attenuation – Recommended geometries for tuned half-wave dipoles – vertical polarization.....	97
Table E.4 – Mutual coupling correction factors for geometry using resonant tunable dipoles spaced 3 m apart	98
Table F.1 – Error budget	99

INTERNATIONAL ELECTROTECHNICAL COMMISSION
INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

**SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY
MEASURING APPARATUS AND METHODS –**

**Part 1-4: Radio disturbance and immunity measuring apparatus –
Antennas and test sites for radiated disturbance measurements**

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 CISPR 16-1-4 has been prepared by CISPR subcommittee A: Radio-interference measurements and statistical methods.

This third edition of CISPR 16-1-4 cancels and replaces the second edition published in 2007 and its Amendments 1 (2007) and 2 (2008). It is a technical revision.

This edition includes the following significant technical change with respect to the previous edition: provisions are added to address evaluation of a set-up table in the frequency range above 1 GHz.

It has the status of a basic EMC publication in accordance with IEC Guide 107, *Electromagnetic compatibility – Guide to the drafting of electromagnetic compatibility publications*.

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

FDIS	Report on voting
CISPR/A/885/FDIS	CISPR/A/891/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.

A list of all parts of CISPR 16 series, under the general title *Specification for radio disturbance and immunity measuring apparatus and methods*, 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.

The contents of the corrigendum of December 2010 have been included in this copy.

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IMPORTANT – The colour inside the 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.

SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY MEASURING APPARATUS AND METHODS –

Part 1-4: Radio disturbance and immunity measuring apparatus – Antennas and test sites for radiated disturbance measurements

1 Scope

This part of CISPR 16 specifies the characteristics and performance of equipment for the measurement of radiated disturbances in the frequency range 9 kHz to 18 GHz. Specifications for antennas and test sites are included.

NOTE In accordance with IEC Guide 107, CISPR 16-1-4 is a basic EMC publication for use by product committees of the IEC. As stated in Guide 107, product committees are responsible for determining the applicability of the EMC standard. CISPR and its sub-committees are prepared to co-operate with product committees in the evaluation of the value of particular EMC tests for specific products.

The requirements of this publication apply at all frequencies and for all levels of radiated disturbances within the CISPR indicating range of the measuring equipment.

Methods of measurement are covered in Part 2-3, and further information on radio disturbance is given in Part 3 of CISPR 16. Uncertainties, statistics and limit modelling are covered in Part 4 of CISPR 16.

2 Normative references

[SIST EN 55016-1-4:2011](https://standards.iteh.ai/catalog/standards/sist/61f5c76-ce74-4422-8b14-8c7e417bb52a/cispr-16-1-4-2011)

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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.

CISPR 16-1-1, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus*

CISPR 16-1-5:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-5: Radio disturbance and immunity measuring apparatus – Antenna calibration test sites for 30 MHz to 1 000 MHz*

CISPR 16-2-3, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 2-3: Methods of measurement of disturbances and immunity – Radiated disturbance measurements*

CISPR/TR 16-3:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 3: CISPR technical reports*
Amendment 1(2005)
Amendment 2(2006)

CISPR 16-4-2, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements*

IEC 60050-161, *International Electrotechnical Vocabulary (IEV) – Chapter 161: Electromagnetic compatibility*

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

3 Terms, definitions and abbreviations

For the purposes of this document, the following terms, definitions and abbreviations apply, as well as those of CISPR 16-1-1, CISPR 16-1-5, and IEC 60050-161.

3.1 Terms and definitions

3.1.1

antenna

that part of a transmitting or receiving system that is designed to radiate or to receive electromagnetic waves in a specified way

NOTE 1 In the context of this standard, the balun is a part of the antenna.

NOTE 2 This term covers various devices such as the wire antenna, free-space-resonant dipole, hybrid antenna and horn antenna.

3.1.2

balun

passive electrical network for the transformation from a balanced to an unbalanced transmission line or device or vice versa

3.1.3

calibration test site

CALTS

open area test site with metallic ground plane and tightly specified site attenuation performance in horizontal and vertical *E*-field (electric field) polarization

NOTE 1 A CALTS is used for determining the free-space antenna factor of an antenna.

NOTE 2 Site attenuation measurements of a CALTS are used for comparison to corresponding site attenuation measurements of a compliance test site, in order to evaluate the performance of the compliance test site.

3.1.4

common mode absorption device

CMAD

device that may be applied on cables leaving the test volume in radiated emission measurements to reduce the compliance uncertainty

3.1.5

compliance test site

COMTS

environment that assures valid, repeatable measurement results of the disturbance field strength from equipment under test for comparison to a compliance limit

3.1.6

cross-polar response

measure of the rejection by the antenna of the cross-polarized field, when the antenna is rotated in a linearly polarized electromagnetic field that is uniform in phase and amplitude over the aperture of the antenna under test