SLOVENSKI STANDARD
SIST EN 55016-2-3:2005

01-julij-2005

Specifikacija za merilne naprave in metode za merjenje radijskih motenj in odpornosti – 2-3. del: Metode za merjenje radijskih motenj in odpornosti – Merjenje sevanih motenj (CISPR 16-2-3:2003)

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

Anforderungen an Geräte und Einrichtungen sowie Festlegung der Verfahren zur Messung der hochfrequenten Störaussendung (Funkstörungen) und Störfestigkeit -- Teil 2-3: Verfahren zur Messung der hochfrequenten Störaussendung (Funkstörungen) und Störfestigkeit - Messung der gestrahlten Störaussendung

Spécifications des méthodes et des appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques -- Partie 2-3: Méthodes de mesure des perturbations et de l'immunité - Mesures des perturbations rayonnées

Ta slovenski standard je istoveten z: **EN 55016-2-3:2004**

ICS:

17.240	Merjenje sevanja	Radiation measurements
33.100.20	Imunost	Immunity

SIST EN 55016-2-3:2005 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN 55016-2-3

October 2004

ICS 33.100.10; 33.100.20

English version

Specification for radio disturbance and immunity measuring apparatus and methods
Part 2-3: Methods of measurement of disturbances and immunity – Radiated disturbance measurements
(CISPR 16-2-3:2003)

Spécifications des méthodes et des appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques
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(CISPR 16-2-3:2003)

This European Standard was approved by CENELEC on 2004-09-01. 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.

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

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Ref. No. EN 55016-2-3:2004 E

Foreword

The text of the International Standard CISPR 16-2-3:2003, prepared by CISPR SC A, Radio-interference measurements and statistical methods, was submitted to the formal vote and was approved by CENELEC as EN 55016-2-3 on 2004-09-01 without any modification.

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)	2005-09-01
– latest date by which the national standards conflicting with the EN have to be withdrawn	(dow)	2007-09-01

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard CISPR 16-2-3:2003 was approved by CENELEC as a European Standard without any modification.

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
CISPR 13 (mod)	2001	Sound and television broadcast receivers and associated equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55013	2001
CISPR 14-1	2000	Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus Part 1: Emission	EN 55014-1	2000
CISPR 16-1-1	2003	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	2004
CISPR 16-1-4	2003	Part 1-4: Radio disturbance and immunity measuring apparatus - Ancillary equipment - Radiated disturbances	EN 55016-1-4	2004
CISPR 16-1-5	2003	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 16-2-1	2003	Part 2-1: Methods of measurement of disturbances and immunity - Conducted disturbance measurements	EN 55016-2-1	2004
CISPR 16-2-2	2003	Part 2-2: Methods of measurement of disturbances and immunity - Measurement of disturbance power	EN 55016-2-2	2004
CISPR 16-2-4	2003	Part 2-4: Methods of measurement of disturbances and immunity - Immunity measurements	EN 55016-2-4	2004
CISPR/TR 16-3	2003	Part 3: CISPR technical reports	-	-
CISPR/TR 16-4-1	2003	Part 4-1: Uncertainties, statistics and limit modeling - Uncertainties in standardized EMC tests	-	-

Publication	Year	Title	EN/HD	Year
CISPR 16-4-2	2003	Part 4-2: Uncertainties, statistics and limit modelling - Uncertainty in EMC measurements	EN 55016-4-2	2004
CISPR/TR 16-4-3	2003	Part 4-3: Uncertainties, statistics and limit modelling - Statistical considerations in the determination of EMC compliance of mass-produced products	-	-

COMMISSION ÉLECTROTECHNIQUE INTERNATIONALE

INTERNATIONAL ELECTROTECHNICAL COMMISSION

CISPR 16-2-3

Première édition
First edition
2003-11

COMITÉ INTERNATIONAL SPÉCIAL DES PERTURBATIONS RADIOÉLECTRIQUES
INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

Spécifications des méthodes et des appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques –

Partie 2-3: Méthodes de mesure des perturbations et de l'immunité – Mesures des perturbations rayonnées

Specification for radio disturbance and immunity measuring apparatus and methods –

Part 2-3: Methods of measurement of disturbances and immunity – Radiated disturbance measurements

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International Electrotechnical Commission
Международная Электротехническая Комиссия

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Pour prix, voir catalogue en vigueur
For price, see current catalogue

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INTERNATIONAL ELECTROTECHNICAL COMMISSION
INTERNATIONAL SPECIAL COMMITTEE ON RADIO INTERFERENCE

SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY MEASURING APPARATUS AND METHODS –

Part 2-3: Methods of measurement of disturbances and immunity – 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 16-2-3 has been prepared by CISPR subcommittee A: Radio interference measurements and statistical methods.

This first edition of CISPR 16-2-3, together with CISPR 16-2-1, CISPR 16-2-2 and CISPR 16-2-4, cancels and replaces the second edition of CISPR 16-2, published in 2003. It contains the relevant clauses of CISPR 16-2 without technical changes.

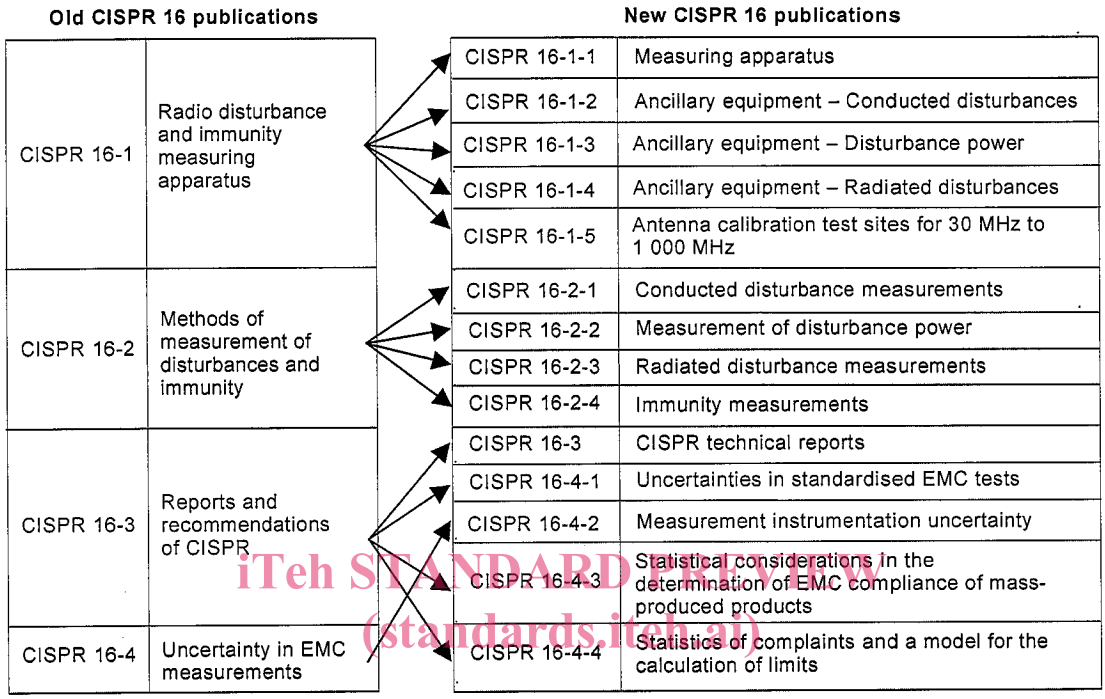
This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until 2005. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

INTRODUCTION

CISPR 16-1, CISPR 16-2, CISPR 16-3 and CISPR 16-4 have been reorganised into 14 parts, to accommodate growth and easier maintenance. The new parts have also been renumbered. See the list given below.



More specific information on the relation between the 'old' CISPR 16-2 and the present 'new' CISPR 16-2-3 is given in the table after this introduction (TABLE RECAPITULATING CROSS REFERENCES).

Measurement instrumentation specifications are given in five new parts of CISPR 16-1, while the methods of measurement are covered now in four new parts of CISPR 16-2. Various reports with further information and background on CISPR and radio disturbances in general are given in CISPR 16-3. CISPR 16-4 contains information related to uncertainties, statistics and limit modelling.

CISPR 16-2 consists of the following parts, under the general title *Specification for radio disturbance and immunity measuring apparatus and methods – Methods of measurement of disturbances and immunity:*

- Part 2-1: Conducted disturbance measurements,
- Part 2-2: Measurement of disturbance power,
- Part 2-3: Radiated disturbance measurements,
- Part 2-4: Immunity measurements.

TABLE RECAPITULATING CROSS-REFERENCES

Second edition of CISPR 16-2 Clauses, subclauses	First edition of CISPR 16-2-3 Clauses, subclauses
1.1	1
1.2	2
1.3	3
2.1	4
2.2	5
2.3	6
2.6	7
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Annexes	**Annexes**
E	A
B	B
Figures	**Figures**
1,..., 4	1,..., 4
18,..., 24	5,..., 11

SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY MEASURING APPARATUS AND METHODS –

Part 2-3: Methods of measurement of disturbances and immunity – Radiated disturbance measurements

1 Scope

This part of CISPR 16 is designated a basic standard, which specifies the methods of measurement of radiated disturbance phenomena in the frequency range 9 kHz to 18 GHz.

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.

CISPR 13:2001, *Sound and television broadcast receivers and associated equipment – Radio disturbance characteristics – Limits and methods of measurement*

CISPR 14-1:2000, *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*

CISPR 16-1-1:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus*

CISPR 16-1-4:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-4: Radio disturbance and immunity measuring apparatus – Ancillary equipment - Radiated disturbances*

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 and site validation*

CISPR 16-2-1:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 2-1: Methods of measurement of disturbances and immunity – Conducted disturbance measurements*

CISPR 16-2-2:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 2-2: Methods of measurement of disturbances and immunity – Measurement of disturbance power*

CISPR 16-2-4:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 2-3: Methods of measurement of disturbances and immunity – Immunity measurements*

CISPR 16-3:2003, *Specification for radio disturbance and Immunity measuring apparatus and methods – Part 3: CISPR technical reports*

CISPR 16-4-1:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-1: Uncertainties, statistics and limit modelling – Uncertainties in standardized EMC tests*

CISPR 16-4-2:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-2: Uncertainties, statistics and limit modelling – Measurement instrumentation uncertainties*

CISPR 16-4-3:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 4-3: Uncertainties, statistics and limit modelling – Statistical considerations in the determination of EMC compliance of mass-produced products*

3 Definitions

For the purpose of this part of CISPR 16, the definitions of IEC 60050(161) apply, as well as the following:

3.1
associated equipment
1) Transducers (e.g. probes, networks and antennas) connected to a measuring receiver or test generator
2) Transducers (e.g. probes, networks, antennas) which are used in the signal or disturbance transfer between an EUT and measuring equipment or a (test-) signal generator

3.2
EUT
the equipment (devices, appliances and systems) subjected to EMC (emission) compliance tests

3.3
product publication
publication specifying EMC requirements for a product or product family, taking into account specific aspects of such a product or product family

3.4
emission limit (from a disturbing source)
the specified maximum emission level of a source of electromagnetic disturbance

[IEV 161-03-12]

3.5
ground reference
a connection that constitutes a defined parasitic capacitance to the surrounding of an EUT and serves as reference potential

NOTE See also IEV 161-04-36.

3.6
(electromagnetic) emission
the phenomenon by which electromagnetic energy emanates from a source

[IEV 161-01-08]

3.7
coaxial cable
a cable containing one or more coaxial lines, typically used for a matched connection of associated equipment to the measuring equipment or (test-)signal generator providing a specified characteristic impedance and a specified maximum allowable cable transfer impedance

3.8
measuring receiver
a receiver for the measurement of disturbances with different detectors

NOTE The receiver is specified according to CISPR 16-1-1.

3.9
test configuration
gives the specified measurement arrangement of the EUT in which an emission level is measured

NOTE The emission level is measured as required by IEV 161-03-11, IEV 161-03-12, IEV 161-03-14 and IEV 161-03-15, definitions of emission level.

3.10
weighting (quasi-peak detection)
the repetition-rate dependent conversion of the peak-detected pulse voltages to an indication corresponding to the psychophysical annoyance of pulsive disturbances (acoustically or visually) according to the weighting characteristics, or alternatively gives the specified manner in which an emission level or an immunity level is evaluated

NOTE 1 The weighting characteristics are specified in CISPR 16-1-1.

NOTE 2 The emission level or immunity level is evaluated as required by IEC 60050(161) definitions of level (see IEV 161-03-01, IEV 161-03-11 and IEV 161-03-14).

3.11
continuous disturbance
RF disturbance with a duration of more than 200 ms at the IF-output of a measuring receiver, which causes a deflection on the meter of a measuring receiver in quasi-peak detection mode which does not decrease immediately

[IEV 161-02-11, modified]

NOTE The measuring receiver is specified in CISPR 16-1-1.

3.12
discontinuous disturbance
for counted clicks, disturbance with a duration of less than 200 ms at the IF-output of a measuring receiver, which causes a transient deflection on the meter of a measuring receiver in quasi-peak detection mode

NOTE 1 For impulsive disturbance, see IEV 161-02-08.

NOTE 2 The measuring receiver is specified in CISPR 16-1-1.

3.13
measurement time
T_m
the effective, coherent time for a measurement result at a single frequency (in some areas also called dwell time)

– for the peak detector, the effective time to detect the maximum of the signal envelope,