SVENSK STANDARD SS-EN 55016-4-2

Fastställd	Utgåva	Sida	Ingår i
2005-01-24	1	1 (1+25)	SEK Område EMC

Svenska Elektriska Kommissionen, SEK

EMC – Utrustning och metoder för mätning av radiostörningar och immunitet – Del 4-2: Onogrannhet vid EMC-mätningar

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

Som svensk standard gäller europastandarden EN 55016-4-2:2004. Den svenska standarden innehåller den officiella engelska språkversionen av EN 55016-4-2:2004.

Nationellt förord

Europastandarden EN 55016-4-2:2004

består av:

– **europastandardens ikraftsättningsdokument,** utarbetat inom CENELEC

– **CISPR 16-4-2, First edition, 2003 - Specification for radio disturbance and immunity measuring apparatus and methods - Part 4-2: Uncertainties, statistics and limit modelling - Uncertainty in EMC measurements**

utarbetat inom International Electrotechnical Commission, IEC.

ICS 33.100.10; 33.100.20

Denna standard är fastställd av Svenska Elektriska Kommissionen, SEK,
som också kan lämna upplysningar om **sakinnehållet** i standarden.
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Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

Många standarder inom elområdet beskriver tekniska lösningar och metoder som åstadkommer den elsäkerhet som föreskrivs av svenska myndigheter och av EU.

SEK är Sveriges röst i standardiseringsarbetet inom elområdet

Svenska Elektriska Kommissionen, SEK, svarar för standardiseringen inom elområdet i Sverige och samordnar svensk medverkan i internationell och europeisk standardisering. SEK är en ideell organisation med frivilligt deltagande från svenska myndigheter, företag och organisationer som vill medverka till och påverka utformningen av tekniska regler inom elektrotekniken.

SEK samordnar svenska intressenters medverkan i SEKs tekniska kommittéer och stödjer svenska experters medverkan i internationella och europeiska projekt.

Stora delar av arbetet sker internationellt

Utformningen av standarder sker i allt väsentligt i internationellt och europeiskt samarbete. SEK är svensk nationalkommitté av International Electrotechnical Commission (IEC) och Comité Européen de Normalisation Electrotechnique (CENELEC).

Standardiseringsarbetet inom SEK är organiserat i referensgrupper bestående av ett antal tekniska kommittéer som speglar hur arbetet inom IEC och CENELEC är organiserat.

Arbetet i de tekniska kommittéerna är öppet för alla svenska organisationer, företag, institutioner, myndigheter och statliga verk. Den årliga avgiften för deltagandet och intäkter från försäljning finansierar SEKs standardiseringsverksamhet och medlemsavgift till IEC och CENELEC.

Var med och påverka!

Den som deltar i SEKs tekniska kommittéarbete har möjlighet att påverka framtida standarder och får tidig tillgång till information och dokumentation om utvecklingen inom sitt teknikområde. Arbetet och kontakterna med kollegor, kunder och konkurrenter kan gynnsamt påverka enskilda företags affärsutveckling och bidrar till deltagarnas egen kompetensutveckling.

Du som vill dra nytta av dessa möjligheter är välkommen att kontakta SEKs kansli för mer information.

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EUROPEAN STANDARD **EN 55016-4-2**

NORME EUROPÉENNE

EUROPÄISCHE NORM October 2004

ICS 33.100.10; 33.100.20

English version

Specification for radio disturbance and immunity measuring apparatus and methods
Part 4-2: Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements
(CISPR 16-4-2:2003)

Spécifications des méthodes et des appareils de mesure des perturbations radioélectriques et de l'immunité aux perturbations radioélectriques
Partie 4-2: Incertitudes, statistiques et modélisation des limites – Incertitudes de mesure CEM
(CISPR 16-4-2:2003)

Anforderungen an Geräte und Einrichtungen sowie Festlegung der Verfahren zur Messung der hochfrequenten Störaussendung (Funkstörungen) und Störfestigkeit
Teil 4-2: Unsicherheiten, Statistik und Modelle zur Ableitung von Grenzwerten (Störmodell) – Unsicherheit bei EMV-Messungen
(CISPR 16-4-2:2003)

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.

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

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 55016-4-2:2004 E

Foreword

The text of the International Standard CISPR 16-4-2:2003, prepared by CISPR SC A, Radio-interference measurements and statistical methods, was submitted to the formal vote and was approved by CENELEC as EN 55016-4-2 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 16-4-2:2003 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.

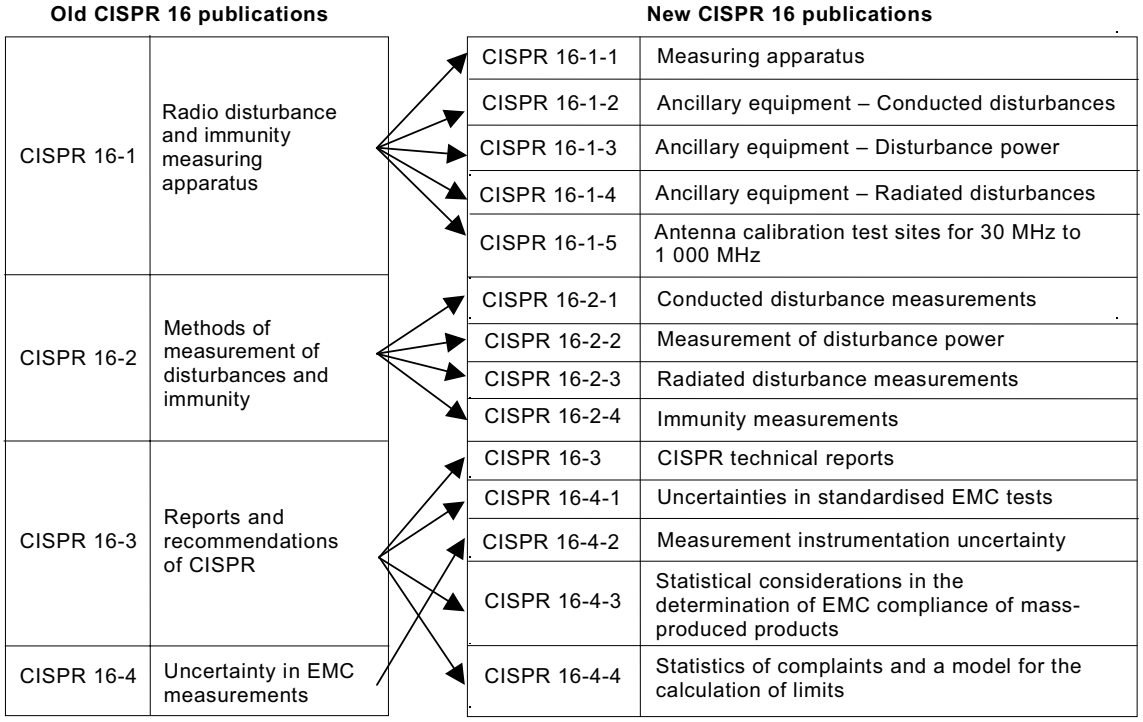
Publication	Year	Title	EN/HD	Year
CISPR 16-1	Series	Specification for radio disturbance and immunity measuring apparatus and methods Part 1: Radio disturbance and immunity measuring apparatus	EN 55016-1	Series
CISPR 16-2	Series	Part 2: Methods of measurement of disturbances and immunity	EN 55016-2	Series
CISPR/TR 16-3	- [1)]	Part 3: CISPR technical reports	-	-
CISPR/TR 16-4-1	- [1)]	Part 4-1: Uncertainties, statistics and limit modeling - Uncertainties in standardized EMC tests	-	-
CISPR/TR 16-4-3	- [1)]	Part 4-3: Uncertainties, statistics and limit modelling - Statistical considerations in the determination of EMC compliance of mass-produced products	-	-
CISPR/TR 16-4-4	- [1)]	Part 4-4: Uncertainties, statistics and limit modeling - Statistics of complaints and a model for the calculation of limits	-	-

[1)] Undated reference.

CONTENTS

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 16-4 and the present ‘new’ CISPR 16-4-2 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 16-4 consists of the following parts, under the general title *Specification for radio disturbance and immunity measuring apparatus and methods - Uncertainties, statistics and limit modelling:*

- Part 4-1: Uncertainties in standardised EMC tests,
- Part 4-2: Uncertainty in EMC measurements,
- Part 4-3: Statistical considerations in the determination of EMC compliance of mass-produced products,
- Part 4-4: Statistics of complaints and a model for the calculation of limits.

TABLE RECAPITULATING CROSS-REFERENCES

First edition of CISPR 16-4 Clauses	First edition of CISPR 16-4-2 Clauses
1	1
2	2
3	3
4	4
Annex	Annex
A	A

SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY MEASURING APPARATUS AND METHODS –

Part 4-2: Uncertainties, statistics and limit modelling – Uncertainty in EMC measurements

1 Scope

This part of CISPR 16 is designated a basic standard, which specifies the manner in which measurement uncertainty is to be taken in to account in determining compliance with CISPR limits. The material is also relevant to any EMC test when interpretation of the results and conclusions reached will be impacted by the uncertainty of the instrumentation used during the testing. Annex A contains the background material used in providing the amount of measurement uncertainty found in generating the CISPR values shown in Clause 4 and hence provides valuable background material for those needing both initial and further information on measurement uncertainty and how to take into account individual uncertainties in the measurement chain. The annex however is not intended to be a tutorial of user manual or to be copied when making uncertainty calculations. For that, the references shown in the bibliography should be used.

Measurement instrumentation specifications are given in CISPR 16-1, while the methods of measurement are covered in CISPR 16-2. Further information and background on CISPR and radio disturbances is given in CISPR 16-3. The other parts of CISPR 16-4 contain further information on uncertainties in general, statistics and limit modelling.

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 16-1 (all parts), *Specification for radio disturbance and immunity measuring apparatus and methods – Radio disturbance and immunity measuring apparatus*

CISPR 16-2 (all parts), *Specification for radio disturbance and immunity measuring apparatus and methods – Methods of measurement of disturbances and immunity*

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

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

CISPR 16-4-3, *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*