

Svenska Elektriska Kommissionen, SEK

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Elektromagnetisk kompatibilitet (EMC) – Del 4-20: Mät- och provningsmetoder – Mätning av emission och immunitet i TEM-vågledare

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

Som svensk standard gäller europastandarden EN 61000-4-20:2003. Den svenska standarden innehåller den officiella engelska språkversionen av EN 61000-4-20:2003.

Nationellt förord

Europastandarden EN 61000-4-20:2003

består av:

- **europastandardens ikraftsättningsdokument**, utarbetat inom CENELEC
- **IEC 61000-4-20, First edition, 2003 - Electromagnetic compatibility (EMC) - Part 4-20: Testing and measurement techniques - Emission and immunity testing in transverse electromagnetic (TEM) waveguides**

utarbetad inom International Electrotechnical Commission, IEC.

ICS 33.100.10; 33.100.20

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English version

Electromagnetic compatibility (EMC)
Part 4-20: Testing and measurement techniques –
Emission and immunity testing
in transverse electromagnetic (TEM) waveguides
(IEC 61000-4-20:2003)

Compatibilité électromagnétique (CEM)
Partie 4-20: Techniques d'essai
et de mesure –
Essais d'émission et d'immunité
dans les guides d'onde TEM
(CEI 61000-4-20:2003)

Elektromagnetische Verträglichkeit (EMV)
Teil 4-20: Prüf- und Messverfahren -
Messung der Störaussendung
und Störfestigkeit in transversal-
elektromagnetischen (TEM-) Wellenleitern
(IEC 61000-4-20:2003)

This European Standard was approved by CENELEC on 2003-04-01. 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, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Slovakia, 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

Foreword

The text of document CIS/A/419/FDIS, future edition 1 of IEC 61000-4-20, prepared by CISPR SC A, Radio-interference measurements and statistical methods, in cooperation with SC 77B, High frequency phenomena, of IEC TC 77, Electromagnetic compatibility, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61000-4-20 on 2003-04-01.

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) 2004-01-01
- latest date by which the national standards conflicting with the EN have to be withdrawn (dow) 2006-04-01

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes A, B, C and ZA are normative and annexes D and E are informative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61000-4-20:2003 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:

CISPR 14	NOTE	Harmonized in EN 55014 series (not modified).
CISPR 20	NOTE	Harmonized as EN 55020:2002 (not modified).
IEC 61000-2-9	NOTE	Harmonized as EN 61000-2-9:1996 (not modified).

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

This European Standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies (including amendments).

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 60050-161	- ¹⁾	International Electrotechnical Vocabulary (IEV) Chapter 161: Electromagnetic compatibility	-	-
IEC 60068-1	- ¹⁾	Environmental testing Part 1: General and guidance	EN 60068-1	1994 ²⁾
IEC 61000-2-11	- ¹⁾	Electromagnetic compatibility (EMC) Part 2-11: Environment - Classification of HEMP environments	-	-
IEC 61000-4-3	- ¹⁾	Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test	EN 61000-4-3	2002 ²⁾
IEC 61000-4-23	- ¹⁾	Part 4-23: Testing and measurement techniques - Test methods for protective devices for HEMP and other radiated disturbances	EN 61000-4-23	2000 ²⁾
IEC/TR 61000-4-32	- ¹⁾	Electromagnetic compatibility (EMC) - Part 4-32: Testing and measurement techniques - HEMP simulator compendium	-	-
IEC/TR 61000-5-3	- ¹⁾	Part 5: Installation and mitigation guidelines -- Section 3: HEMP protection concepts	-	-

¹⁾ Undated reference.

²⁾ Valid edition at date of issue.

<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: Radio disturbance and immunity measuring apparatus	-	-
CISPR 16-2	- ¹⁾	Part 2: Methods of measurement of disturbances and immunity	-	-
CISPR 22 (mod)	- ¹⁾	Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement	EN 55022	1998 ²⁾

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ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-20: Testing and measurement techniques – Emission and immunity testing in transverse electromagnetic (TEM) waveguides

1 Scope and object

This part of IEC 61000 relates to emission and immunity test methods for electrical and electronic equipment using various types of transverse electromagnetic (TEM) waveguides. This includes open (for example, striplines and EMP simulators) and closed (for example, TEM cells) structures, which can be further classified as one-, two-, or multi-port TEM waveguides. The frequency range depends on the specific testing requirements and the specific TEM waveguide type.

The object of this standard is to describe

- TEM waveguide characteristics, including typical frequency ranges and EUT-size limitations;
- TEM waveguide validation methods for EMC measurements;
- the EUT (i.e. EUT cabinet and cabling) definition;
- test set-ups, procedures, and requirements for radiated emission testing in TEM waveguides and
- test set-ups, procedures, and requirements for radiated immunity testing in TEM waveguides.

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

IEC 60068-1, *Environmental testing – Part 1: General and guidance*.

IEC 61000-2-11, *Electromagnetic compatibility (EMC) – Part 2-11: Environment – Classification of HEMP environments*. Basic EMC publication

IEC 61000-4-3, *Electromagnetic compatibility (EMC) – Part 4-3: Testing and measurement techniques – Radiated, radio-frequency, electromagnetic field immunity test*. Basic EMC publication

IEC 61000-4-23, *Electromagnetic compatibility (EMC) – Part 4-23: Testing and measurement techniques – Test methods for protective devices for HEMP and other radiated disturbances*. Basic EMC publication