

**SLOVENSKI
STANDARD**

**SIST EN 55016-2-
2:2005/A1:2005**

julij 2005

Specifikacija za merilne naprave in metode za merjenje radijskih motenj in odpornosti – 2-2. del: Metode za merjenje radijskih motenj in odpornosti – Merjenje moči motenj (CISPR 16-2-2:2003/A1:2004)

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 16-2-2:2003/A1:2004)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 55016-2-2:2005/A1:2005
https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-98d223b3dca1/sist-en-55016-2-2-2005-a1-2005](https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-98d223b3dca1/sist-en-55016-2-2-2005-a1-2005)

ICS 17.220.20; 33.100.20

Referenčna številka
SIST EN 55016-2-2:2005/A1:2005(en)

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 55016-2-2:2005/A1:2005

<https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-98d223b3dca1/sist-en-55016-2-2-2005-a1-2005>

**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 16-2-2:2003/A1:2004)**

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

Partie 2-2: Méthodes de mesure
des perturbations et de l'immunité -
Mesure de la puissance perturbatrice
(CISPR 16-2-2:2003/A1:2004)

Anforderungen an Geräte und
Einrichtungen sowie Festlegung
der Verfahren zur Messung der
hochfrequenten Störaussendung
(Funkstörungen) und Störfestigkeit
Teil 2-2: Verfahren zur Messung
der hochfrequenten Störaussendung
(Funkstörungen) und Störfestigkeit -
Messung der Störleistung
(CISPR 16-2-2:2003/A1:2004)

<https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-8d22303dca78/en-55016-2-2:2003/a1:2005>

This amendment A1 modifies the European Standard EN 55016-2-2:2004; it was approved by CENELEC on 2004-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this amendment 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 amendment 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

Foreword

The text of amendment 1:2004 to the International Standard CISPR 16-2-2:2003, prepared by CISPR SC A, Radio-interference measurements and statistical methods, was submitted to the Unique Acceptance Procedure and was approved by CENELEC as amendment A1 to EN 55016-2-2:2004 on 2004-12-01 without any modification.

The following dates were fixed:

- latest date by which the amendment has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2005-12-01
- latest date by which the national standards conflicting
with the amendment have to be withdrawn (dow) 2007-12-01

Endorsement notice

The text of amendment 1:2004 to the International Standard CISPR 16-2-2:2003 was approved by CENELEC as an amendment to the European Standard without any modification.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 55016-2-2:2005/A1:2005](https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-98d223b3dca1/sist-en-55016-2-2-2005-a1-2005)

<https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-98d223b3dca1/sist-en-55016-2-2-2005-a1-2005>

COMMISSION
ÉLECTROTECHNIQUE
INTERNATIONALE

CISPR
16-2-2

2003

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

AMENDEMENT 1
AMENDMENT 1
2004-05

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

Amendement 1

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

Partie 2-2:

**Méthodes de mesure des perturbations
et de l'immunité – Mesure de la puissance
perturbatrice**

<https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-98d223b3dca1/sist-en-55016-2-2-2005-a1-2005>

Amendment 1

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

Part 2-2:

**Methods of measurement of disturbances and
immunity – Measurement of disturbance power**

© IEC 2004 Droits de reproduction réservés — Copyright - all rights reserved

International Electrotechnical Commission, 3, rue de Varembe, PO Box 131, CH-1211 Geneva 20, Switzerland
Telephone: +41 22 919 02 11 Telefax: +41 22 919 03 00 E-mail: inmail@iec.ch Web: www.iec.ch



Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
PRICE CODE

M

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

FOREWORD

This amendment has been prepared by CISPR subcommittee A: Radio-interference measurements and statistical methods.

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

FDIS	Report on voting
CIS/A/506/FDIS	CIS/A/524/RVD

Full information on the voting for the approval of this amendment can be found in the report on voting indicated in the above table.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until 2007. At this date, the publication will be

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

iTeh STANDARD PREVIEW (standards.iteh.ai)

Page 15

3 Definitions

[SIST EN 55016-2-2:2005/A1:2005](https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-98d223b5dca1/sist-en-55016-2-2-2005-a1-2005)

Change the title of this clause as follows:

3 Terms and definitions

Add, after definition 3.23, the following new definitions and abbreviations:

3.24

lead under test

LUT

lead, associated with a EUT, that is the subject of an emission or an immunity test

NOTE In general, a EUT may have one or more leads that are used for interconnections to the mains supply, or other networks, or for interconnection to auxiliary equipment. These leads are generally electrical cables such as mains cables, coaxial cables, data bus cables, etc.

3.25

absorbing clamp measurement method

ACMM

method for measurement of disturbance power of an equipment under test (EUT) by using an absorbing clamp device that is clamped around the lead(s) of the EUT

3.26

absorbing clamp test site

ACTS

test site that is validated to perform disturbance power measurements by using the absorbing clamp measurement method (ACMM)

3.27
clamp factor
CF

ratio of the disturbance power of an EUT to the received voltage at the output of the absorbing clamp

NOTE The clamp factor is a transducer factor of the absorbing clamp.

3.28
clamp reference point
CRP

indication on the outside of the absorbing clamp that is related to the longitudinal position of the front edge of the current transformer within the clamp and is used to define the horizontal position of the clamp during the measurement

3.29
slide reference point
SRP

end of the clamp slide where the EUT is located and which is used to define the horizontal distance to the clamp reference point (CRP) of the absorbing clamp during the measurement procedure

Page 41

iTeh STANDARD PREVIEW
(standards.iteh.ai)

7 Measurements using the absorbing clamp, 30 MHz to 1 000 MHz

Replace the existing title and text of Clause 7 by the following:

[SIST EN 55016-2-2:2005/A1:2005](https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-96d22309dca1/cispr-16-2-2005-a1-2005)

[https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-](https://standards.iteh.ai/catalog/standards/sist/abe5cd2e-bd4c-4d44-b70c-96d22309dca1/cispr-16-2-2005-a1-2005)

7 Measurements using the absorbing clamp**7.1 Introduction**

For small equipments under test (EUTs) connected only by one mains lead, or another type of lead, the absorbing clamp measurement method (ACMM) offers an alternative to the radiated emission measurement method. The ACMM determines the disturbance power by using an absorbing clamp. The advantages of the ACMM with respect to the radiated emission test are mainly the reduced measurement time and reduced cost of the test site.

The basis of the ACMM is the recognition that radiated emissions from electrically small equipment (see 7.2.2) can primarily be attributed to common mode currents flowing on e.g., the mains lead attached to the equipment. The disturbance potential of an EUT having one external lead may be taken as the power it could supply to its lead acting as a radiating antenna. This power is assumed to be nearly equal to that supplied by the EUT to the absorbing clamp placed around the lead under test (LUT) at the position where the measured common mode current is maximum. An exact model of the ACMM is not available. This makes the uncertainty considerations and the comparison between the radiated emission measurement method and the ACMM difficult. The historical background of the absorbing clamp is described in detail in Annex A.

This clause establishes the general requirements for the measurement of disturbance power produced at the leads of a EUT. For specific products, more specific measurement procedures and operating conditions may be necessary. The limitations of the ACMM are stated in 7.2. The calibration and validation methods related to the ACMM are given in Clause 4 of CISPR 16-1-3. Measurement instrumentation uncertainty considerations on the ACMM are described in CISPR 16-4-2.

7.2 Application of the absorbing clamp measurement method

The applicability (scope) of this ACMM is limited. The applicability of the ACMM for certain categories of products shall be decided by the product committees, by taking into account the limitations given in the following subclauses. The precise measuring procedure and its applicability has to be specified for each category of products in the product standard.

7.2.1 Frequency range

The ACMM as described in this clause may be applied to measure the disturbance power of an EUT between 30 MHz and 1 000 MHz.

7.2.2 EUT unit dimensions

The EUT unit is the housing of the EUT without its connecting leads. The ACMM is most accurate for EUT units having dimensions typically smaller than a quarter of a wavelength of the highest measured frequency and with one or more leads as the main source of disturbance radiation. If the dimensions of the EUT unit approach a quarter of a wavelength of the highest measuring frequency, then direct radiation of the EUT unit may occur. Then, the ACMM may not be suitable to assess the full radiation properties of the EUT. In general, the method is most useful for small EUTs and in the frequency range of 30 MHz to 300 MHz. The ACMM is applicable to both tabletop and floor standing EUTs.

7.2.3 LUT requirements

Initially, the ACMM is applied for EUTs with a single mains lead (see Annex A). When the EUT has external leads other than a mains lead, also those leads can radiate disturbances. These auxiliary leads may be connected to an auxiliary unit. The ACMM can also be used to measure these leads. The disturbance contribution of such auxiliary leads connected to auxiliary apparatus depends on the length of the auxiliary lead with respect to the wavelength. If length of the auxiliary lead is larger than half a wavelength of the highest measurement frequency, then the contribution of this auxiliary lead shall be taken into account in the measurement procedure. Product standards shall give specific information on the treatment of auxiliary leads (like extension of these leads), the set-up of these auxiliary leads and auxiliary apparatus in order to enable reproducibility of the disturbance measurement.

If the auxiliary lead is permanently attached to the appliance and to the auxiliary apparatus and if the length of the auxiliary lead is less than a half wavelength at the highest frequency, then measurements are not to be made on these leads.

7.3 Requirements for measurements instrumentation and test site

A schematic drawing of the ACMM is given in Figure 5. The following requirements apply for the various parts of the instrumentation and for the test site.

7.3.1 Measuring receiver

The measuring receiver shall comply with the requirements of CISPR 16-1-1. When using spectrum analyzers or scanning receivers, the recommendations given in Annex B shall be considered.

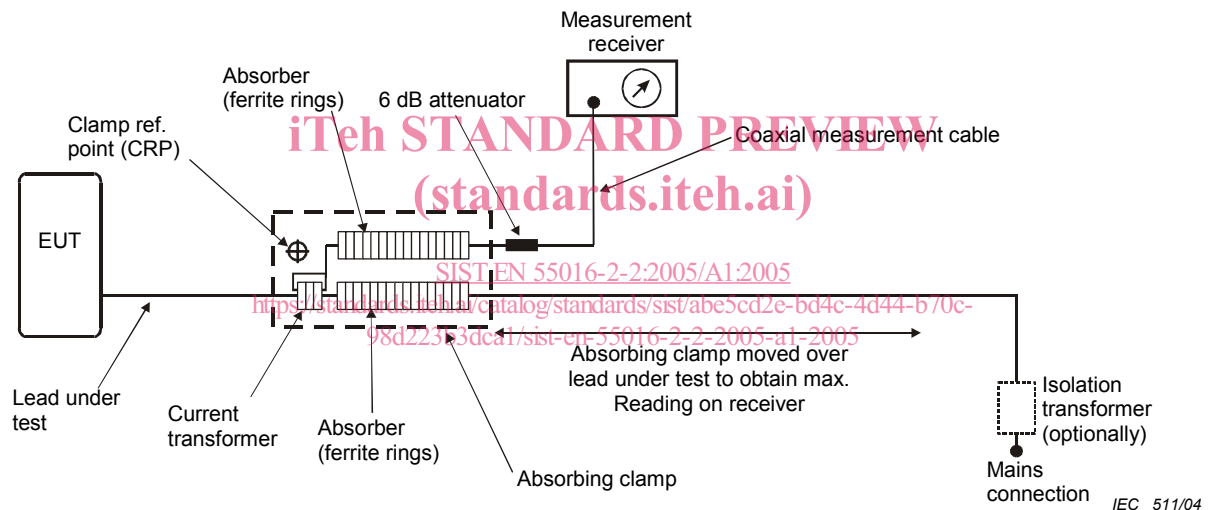
7.3.2 Absorbing clamp assembly

The absorbing clamp assembly consists of the following parts:

- absorbing clamp (includes internally the current transformer and absorbers along the LUT and measurement cable; see Figure 5);
- 6 dB attenuator;
- measurement cable.

The absorbing clamp assembly shall comply with the requirements given in Clause 4 of CISPR 16-1-3. The clamp factor (CF) of this absorbing clamp assembly shall be determined in accordance with the measurement procedure given in Clause 4 of CISPR 16-1-3. Also the decoupling factors of the absorbing clamp assembly shall be checked in accordance with the measurement procedures given in Clause 4 of CISPR 16-1-3.

The clamp reference point (CRP) indicates the longitudinal position of the front edge of the current transformer within the clamp. This reference point is used to define the position of the clamp during the measurement procedure. The CRP shall be indicated on the outside housing of the absorbing clamp.



NOTE 1 The 6-dB attenuator and the measurement cable are integral parts of the absorbing clamp and shall be calibrated together.

NOTE 2 The 6-dB attenuator may be located inside the absorbing clamp unit.

Figure 5 – Schematic drawing of the absorbing clamp measurement method

7.3.3 Absorbing clamp test site requirements

The absorbing clamp test site (ACTS) is a site that is used for application of the ACMM. The ACTS is specified in detail in Clause 4 of CISPR 16-1-3, and its performance shall be validated in accordance with the procedure given in CISPR 16-1-3. The ACTS can be either an outdoor or indoor facility and includes the following elements (Figure 6):

- a non-metallic table for support of the EUT unit;
- the clamp slide to support the LUT and the absorbing clamp;
- a moveable support or hook system for the absorbing clamp measurement cable;
- auxiliary means such as a rope to move the absorbing clamp.

The above ACTS elements shall be included in the ACTS validation procedure.