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Electromagnetic compatibility - Emission measurements in fully anechoic chambers

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English version

**Electromagnetic compatibility -
Emission measurements in fully anechoic chambers**

Compatibilité électromagnétique -
Emission en chambres
anéchoïques entiers

Elektromagnetische Verträglichkeit -
Störaussendung in Absorberräumen

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CENELEC

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

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Foreword

This Technical Report was prepared by the Technical Committee CENELEC TC 210, Electromagnetic Compatibility (EMC).

This document supersedes R210-010:2002.

In order not to lose the information provided in R210-010:2002, CENELEC TC 210 decided to transfer the content of that document unchanged into a Technical Report. It should be noted that CISPR incorporated a major part of the document R210-010:2002 into the CISPR 16 series and the references to standards were not updated.

The document still provides a comprehensive overview and describes some fundamental items of interest for the appropriate use of fully anechoic chambers. The main reason for keeping the document in the public domain in this new form is that it contains background information that has not been included in EN 55016-1-4.

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.

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1 Scope

This Technical Report applies to emission measurements of radiated electromagnetic fields in Fully Anechoic Rooms (FAR) in the frequency range from 30 MHz to 18 GHz. This Technical Report covers the frequency range from 30 MHz – 1 000 MHz. The frequency range above 1 GHz is under consideration, due to the absence of practical experience.

This Technical Report describes the validation procedure for the Fully Anechoic Room for radiated emission tests and the procedures to carry out the tests (e.g. test set up, EUT position, cable layout and termination, test procedures). Recommendations for the relation between FAR emission limits and common Open Area Test Site (OATS) emission limits given in standards such as EN 55011 and EN 55022 are given in Annex B.

This FAR emission method may be chosen by product committees as an alternative method to emission measurement on an Open Area Test Site (OATS) as described in CISPR 16 series. In such cases, the product committee should also define the appropriate limits. Typical measurement uncertainty values for FARs and OATS are given in Annex C.

2 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.

EN 50147-1, *Anechoic chambers – Part 1: Shield attenuation measurement*

EN 55011, *Industrial, scientific and medical (ISM) radio-frequency equipment – Electromagnetic disturbance characteristics – Limits and methods of measurement (CISPR 11, mod.)*

EN 55022:1998 ¹⁾, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement (CISPR 22:1997, mod.)*

CISPR 16-1:1999 ²⁾, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1: Radio disturbance and immunity measuring apparatus*

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

CISPR 16-3:2000 ⁴⁾, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 3: Reports and recommendations of CISPR*

CISPR 16-4 series, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainties, statistics and limit modelling*

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

1) Superseded by EN 55022:2006, *Information technology equipment – Radio disturbance characteristics – Limits and methods of measurement (CISPR 22:2005, mod.)*.

2) Superseded by CISPR 16-1 series, harmonized as EN 55016-1 series, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1: Radio disturbance and immunity measuring apparatus*.

3) Superseded by CISPR 16-2 series, harmonized as EN 55016-2 series, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 2: Methods of measurement of disturbance and immunity*.

4) Superseded by CISPR 16-3:2003, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 3: CISPR technical reports*.

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