

Specification for radio disturbance and immunity measuring apparatus and methods - Part 1-5: Radio disturbance and immunity measuring apparatus - Antenna calibration sites and reference test sites for 5 MHz to 18 GHz

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

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Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 06.02.2015.	Date of Availability of the European standard is 06.02.2015.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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ICS 33.100.10, 33.100.20

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English Version

Specification for radio disturbance and immunity measuring
apparatus and methods -
Part 1-5: Radio disturbance and immunity measuring apparatus -
Antenna calibration sites and reference
test sites for 5 MHz to 18 GHz
(CISPR 16-1-5:2014)

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

Partie 1-5: Appareils de mesure des perturbations
radioélectriques et de l'immunité aux perturbations
radioélectriques - Emplacements d'étalonnage d'antenne et
emplacements d'essai de référence pour la plage comprise
entre 5 MHz et 18 GHz
(CISPR 16-1-5:2014)

Anforderungen an Geräte und Einrichtungen sowie
Festlegung der Verfahren zur Messung der hochfrequenten
Störaussendung (Funkstörungen) und Störfestigkeit -
Teil 1-5: Geräte und Einrichtungen zur Messung der
hochfrequenten Störaussendung (Funkstörungen) und
Störfestigkeit - Messplätze für die Antennenkalibrierung und
Referenz-Messplätze für den Frequenzbereich
von 5 MHz bis 18 GHz
(CISPR 16-1-5:2014)

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Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

Foreword

The text of document CISPR/A/1086A/FDIS, future edition 2 of CISPR 16-1-5, prepared by CISPR SC A "Radio-interference measurements and statistical methods" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 55016-1-5:2015.

The following dates are fixed:

- latest date by which the document has to be (dop) 2015-10-21
implemented at national level by
publication of an identical national
standard or by endorsement
- latest date by which the national (dow) 2018-01-21
standards conflicting with the
document have to be withdrawn

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In the official version, for Bibliography, the following notes have to be added for the standards indicated:

CISPR 16-1-1:2010	NOTE	Harmonized as EN 55016-1-1:2010 (not modified).
CISPR 16-1-1:2010/A1:2010	NOTE	Harmonized as EN 55016-1-1:2010/A1:2010 (not modified).
CISPR 16-2-3:2010	NOTE	Harmonized as EN 55016-2-3:2010 (not modified).
CISPR 16-2-3:2010/A1:2010	NOTE	Harmonized as EN 55016-2-3:2010/A1:2010 (not modified).
CISPR 16-4 Series	NOTE	Only Part 4-2 harmonized as EN 55016-4-2.

Annex ZA (normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cenelec.eu

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
CISPR 16-1-4	2010	Specification for radio disturbance and immunity measuring apparatus and methods -	EN 55016-1-4	2010
+A1	2012	Part 1-4: Radio disturbance and immunity measuring apparatus - Antennas and test sites for radiated disturbance measurements	+A1	2012
CISPR 16-1-6	2014	Specification for radio disturbance and immunity measuring apparatus and methods -	EN 55016-1-6	2015
		Part 1-6: Radio disturbance and immunity measuring apparatus - EMC-antenna calibration		
IEC 60050	Series	International Electrotechnical Vocabulary	-	-

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INTRODUCTION

This standard describes validation procedures for Calibration Test Sites (CALTS) that are used to calibrate antennas in the frequency range 5 MHz to 18 GHz. The associated antenna calibration procedures are described in CISPR 16-1-6.

Due to problems with suppressing ground reflections in the frequency range 30 MHz to 200 MHz, the main function of a reflecting ground plane is for the calibration of dipole, biconical, and hybrid antennas over the frequency range for which their H-plane patterns are uniform. The free-space antenna factor, F_a , for dipole antennas may be measured in a free-space environment above 200 MHz. Because of the difficulty of reducing reflections from objects that surround an antenna, and in particular the ground surface, a flat metal ground plane is used to ensure reproducibility of results and to enable the ground reflected signal to be precisely removed mathematically.

Requirements for the construction of a CALTS are given in Annex A. The specifications and validation procedures for a CALTS are given in Clause 4. The most precise way of validating a CALTS is to use calculable dipole antennas, which are the basis of the validation procedure in this standard. The design principles of calculable antennas are given in Annex B, and the theory and methods for calculating site insertion loss (SIL) are given in Annex C and Annex D.

Validation procedures for other antenna calibration sites are given in Clause 5 through Clause 7. Where an antenna calibration method utilizes the ground reflection, a CALTS is required. The validation methods are summarized in Table 1 with reference to the associated antenna calibration methods in CISPR 16-1-6.

All site validation methods involve the measurement of SIL between two antennas. It is critical that the validation of the site itself not be unduly compromised by reflections from antenna supports; see A.3 for associated guidance.

