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Australian/New Zealand Standard™

Specification for radio disturbance and immunity measuring apparatus and methods

Part 1.6: Radio disturbance and immunity measuring apparatus — EMC antenna calibration



AS/NZS CISPR 16.1.6:2015

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- EMC Society of Australia
- Energy Networks Australia
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- Lighting Council New Zealand
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Australian/New Zealand Standard™

Specification for radio disturbance and immunity measuring apparatus and methods

Part 1.6: Radio disturbance and immunity measuring apparatus — EMC antenna calibration

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE-003, Electromagnetic Compatibility.

A1 Amendment No. 1 to this Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE-003, Electromagnetic Compatibility. **A1**

A2 Amendment No. 2 to this Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE-003, Electromagnetic Compatibility. **A2**

The objective of this Standard is to provide procedures and supporting information for the calibration of antennas for determining antenna factors (AF) that are applicable to antennas intended for use in radiated disturbance measurements.

A2 This Standard is identical with, and has been reproduced from CISPR 16-1-6, Ed. 1.0 (2014), *Specification for radio disturbance and immunity measuring apparatus and methods, Part 1-6: Radio disturbance and immunity measuring apparatus—EMC antenna calibration* and its Amendment No. 1 (2017) and Amendment No. 2 (2022), which are consolidated into the source text. **A2**

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- (a) In the source text “this part of CISPR 16” should read “this Australian/New Zealand Standard”.
- (b) A full point substitutes for a comma when referring to a decimal marker.

References to International Standards should be replaced by references to Australian or Australian/New Zealand Standards, as follows:

<i>Reference to International Standard</i>		<i>Australian/New Zealand Standard</i>	
CISPR		AS/NZS CISPR	
16	Specification for radio disturbance and immunity measuring apparatus and methods	16	Specification for radio disturbance and immunity measuring apparatus and methods
16-1-4:2020 AMD1:2012	Part 1-4: Radio disturbance and immunity measuring apparatus—Antennas and test sites for radiated disturbance measurements	16.1.4:2013	Part 1.4: Radio disturbance and immunity measuring apparatus—Antennas and test sites for radiated disturbance measurements
16-1-5:2014	Part 1-5: Radio disturbance and immunity measuring apparatus—Antenna calibration sites and reference test sites for 5 MHz to 18 GHz	16.1.5:2015	Part 1.5: Radio disturbance and immunity measuring apparatus—Antenna calibration sites and reference test sites for 5 MHz to 18 GHz

Only normative references that have been adopted as Australian or Australian/New Zealand Standards have been listed.

The terms “normative” and “informative” have been used in this Standard to define the application of the annexes to which they apply. A “normative” annex is an integral part of a Standard, whereas an “informative” annex is only for information and guidance.

NOTES

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INTERNATIONAL ELECTROTECHNICAL COMMISSION
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**SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY
MEASURING APPARATUS AND METHODS –**

**Part 1-6: Radio disturbance and immunity measuring apparatus –
EMC antenna calibration**

FOREWORD

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CISPR 16-1-6 edition 1.2 contains the first edition (2014-12) [documents CISPR/A/1087/FDIS and CISPR/A/1098/RVD], its amendment 1 (2017-01) [documents CISPR/A/1195/FDIS and CISPR/A/1204/RVD] and its amendment 2 (2022-03) [documents CIS/A/1362/FDIS and CIS/A/1365/RVD].

This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.

International Standard CISPR 16-1-6 has been prepared by CISPR subcommittee A: Radio-interference measurements and statistical methods.

It has the status of a basic EMC Standard in accordance with IEC Guide 107, *Electromagnetic compatibility – Guide to the drafting of electromagnetic compatibility publications*.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts of CISPR 16 series, under the general title *Specification for radio disturbance and immunity measuring apparatus and methods*, can be found on the IEC website.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
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SPECIFICATION FOR RADIO DISTURBANCE AND IMMUNITY MEASURING APPARATUS AND METHODS –

Part 1-6: Radio disturbance and immunity measuring apparatus – EMC antenna calibration

1 Scope

This part of CISPR 16 provides procedures and supporting information for the calibration of antennas for determining antenna factors (AF) that are applicable to antennas intended for use in radiated disturbance measurements.

It has the status of a basic EMC Standard in accordance with IEC Guide 107, *Electromagnetic compatibility – Guide to the drafting of electromagnetic compatibility publications*.

The AF of an antenna is influenced by nearby surroundings and by its position in space relative to the radiating source. This standard focuses on antenna calibrations that provide the AF in a free-space environment in the direction of the boresight of the antenna. The frequency range addressed is 9 kHz to 18 GHz. The relevant antenna types covered in this standard are monopole, loop, dipole, biconical, log-periodic dipole-array (LPDA), hybrid and horn antennas.

Guidance is also provided on measurement uncertainties associated with each calibration method and configuration, and the test instrumentation used.

2 Normative references

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.

CISPR 16-1-2, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-2: Radio disturbance and immunity measuring apparatus – Coupling devices for conducted disturbance measurements*

CISPR 16-1-4:2019, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-4: Radio disturbance and immunity measuring apparatus – Antennas and test sites for radiated disturbance measurements*

CISPR 16-1-5:2014, *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*

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

ISO/IEC Guide 98-3:2008, *Uncertainty of measurement – Part 3: Guide to the expression of uncertainty in measurement (GUM:1995)*