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Australian/New Zealand Standard™

Electromagnetic compatibility (EMC)

Part 4.3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test



AS/NZS IEC 61000.4.3:2021

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Australian/New Zealand Standard™

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Part 4.3: Testing and measurement techniques — Radiated, radio-frequency, electromagnetic field immunity test

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Preface

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee TE-003, Electromagnetic Compatibility, to supersede AS/NZS IEC 61000.4.3:2013.

The objective of this document is to establish test levels and required test procedures for the immunity requirements of electrical and electronic equipment to radiated electromagnetic energy.

The object of this document is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to radiated, radio-frequency electromagnetic fields. The test method documented in this document describes a consistent method to assess the immunity of an equipment or system against RF electromagnetic fields from RF sources not in close proximity to the EUT. The test environment is specified in Clause 6.

Particular considerations are devoted to the protection against radio-frequency emissions from digital radiotelephones and other RF emitting devices.

This document is an independent test method. It is not possible to use other test methods as substitutes for claiming conformity to this document.

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

**Part 4-3: Testing and measurement techniques –
Radiated, radio-frequency electromagnetic field immunity test**

FOREWORD

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International Standard IEC 61000-4-3 has been prepared by subcommittee 77B: High frequency phenomena, of IEC technical committee 77: Electromagnetic compatibility.

It forms part 4-3 of IEC 61000. It has the status of a basic EMC publication in accordance with IEC Guide 107.

This fourth edition cancels and replaces the third edition published in 2006, Amendment 1:2007 and Amendment 2:2010. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- a) testing using multiple test signals has been described;
- b) additional information on EUT and cable layout has been added;
- c) the upper frequency limitation has been removed to take account of new services;
- d) the characterization of the field as well as the checking of power amplifier linearity of the immunity chain are specified.

The text of this International Standard is based on the following documents:

FDIS	Report on voting
77B/830/FDIS	77B/825/RVD

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

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

A list of all parts in the IEC 61000 series, published under the general title *Electromagnetic compatibility (EMC)*, can be found on the IEC website.

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

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

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

IEC 61000 is published in separate parts according to the following structure:

Part 1: General

General considerations (introduction, fundamental principles)
Definitions, terminology

Part 2: Environment

Description of the environment
Classification of the environment
Compatibility levels

Part 3: Limits

Emission limits
Immunity limits (in so far as they do not fall under the responsibility of the product committees)

Part 4: Testing and measurement techniques

Measurement techniques
Testing techniques

Part 5: Installation and mitigation guidelines

Installation guidelines
Mitigation methods and devices

Part 6: Generic standards

Part 9: Miscellaneous

Each part is further subdivided into several parts, published either as international standards or as technical specifications or technical reports, some of which have already been published as sections. Others will be published with the part number followed by a dash and a second number identifying the subdivision (example: IEC 61000-6-1).

This part is an international standard which gives immunity requirements and test procedures related to radiated, radio-frequency, electromagnetic fields.

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-3: Testing and measurement techniques – Radiated, radio-frequency electromagnetic field immunity test

1 Scope

This part of IEC 61000 is applicable to the immunity requirements of electrical and electronic equipment to radiated electromagnetic energy. It establishes test levels and the required test procedures.

The object of this document is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to radiated, radio-frequency electromagnetic fields. The test method documented in this part of IEC 61000 describes a consistent method to assess the immunity of an equipment or system against RF electromagnetic fields from RF sources not in close proximity to the EUT. The test environment is specified in Clause 6.

NOTE 1 As described in IEC Guide 107, this is a basic EMC publication for use by product committees of the IEC. As also stated in Guide 107, the IEC product committees are responsible for determining whether this immunity test standard should be applied or not, and if applied, they are responsible for determining the appropriate test levels and performance criteria. TC 77 and its sub-committees are prepared to co-operate with product committees in the evaluation of the value of particular immunity tests for their products.

NOTE 2 Immunity testing against RF sources in close proximity to the EUT is defined in IEC 61000-4-39.

Particular considerations are devoted to the protection against radio-frequency emissions from digital radiotelephones and other RF emitting devices.

NOTE 3 Test methods are defined in this part for evaluating the effect that electromagnetic radiation has on the equipment concerned. The simulation and measurement of electromagnetic radiation is not adequately exact for quantitative determination of effects. The test methods defined in this basic document have the primary objective of establishing an adequate reproducibility of testing configuration and repeatability of test results at various test facilities.

This document is an independent test method. It is not possible to use other test methods as substitutes for claiming compliance with this document.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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) – Part 161: Electromagnetic compatibility* (available at www.electropedia.org)

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-161 and the following apply.