



CSA C61000-4-1:19
(IEC TR 61000-4-1:2016, MOD)
National Standard of Canada



CSA C61000-4-1:19
Electromagnetic compatibility (EMC) — Part 4-1:
Testing and measurement techniques — Overview of
the IEC 61000-4 series
(IEC TR 61000-4-1:2016, MOD)



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CSA C61000-4-1:19

Electromagnetic compatibility (EMC) — Part 4-1: Testing and measurement techniques — Overview of the IEC 61000-4 series (IEC TR 61000-4-1:2016, MOD)

Prepared by
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Reviewed by



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CSA Preface

This is the second edition of CSA C61000-4-1, *Electromagnetic compatibility (EMC) — Part 4-1: Testing and measurement techniques — Overview of the IEC 61000-4 series*, which is an adoption, with Canadian deviations, of the identically titled IEC (International Electrotechnical Commission) Technical Report 61000-4-1 (first edition, 2016-04). It supersedes the previous edition, published in 2009 as CAN/CSA-C61000-4-1 (adopted IEC 61000-4-1:2006). At the time of publication, IEC TR 61000-4-1:2016 is available from IEC in English only. CSA Group will publish the French version when it becomes available from IEC.

For brevity, this Standard will be referred to as “CSA C61000-4-1” throughout.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

The technical report was reviewed for Canadian adoption by the CSA Subcommittee on Low Frequency Electromagnetic Compatibility, under the jurisdiction of the CSA Technical Committee on Electromagnetic Compatibility and the CSA Strategic Steering Committee on Power Engineering and Electromagnetic Compatibility, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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- c) wording of the proposed change; and
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TECHNICAL REPORT

BASIC EMC PUBLICATION

**Electromagnetic compatibility (EMC) –
Part 4-1: Testing and measurement techniques – Overview of the IEC 61000-4
series**





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Part 4-1: Testing and measurement techniques – Overview of the IEC 61000-4
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ELECTROMAGNETIC COMPATIBILITY (EMC) –**Part 4-1: Testing and measurement techniques –
Overview of the IEC 61000-4 series**

FOREWORD

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IEC TR 61000-4-1, which is a technical report, has been prepared by IEC technical committee 77: Electromagnetic compatibility.

This Technical Report forms Part 4-1 of IEC 61000. It has the status of a basic EMC publication in accordance with IEC Guide 107.

This first edition as a Technical Report cancels and replaces the third edition of the International Standard published in 2006. This edition constitutes a technical revision.

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

- a) updates the text to include reference to the latest publications of the IEC 61000-4 series;
- b) gives more detailed assignment between applicable immunity tests and the electromagnetic environment in which equipment is intended to be used.

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

Enquiry draft	Report on voting
77/498/DTR	77/508/RVC

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

This publication 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 publication will remain unchanged until the stability date indicated on the IEC website under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

A bilingual version of this publication may be issued at a later date.

INTRODUCTION

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

Part 1: General

General consideration (introduction, fundamental principles)
Definitions, terminology

Part 2: Environment

Description of the environment
Classification of the environment
Compatibility levels

Part 3: Limits

Emission limits
Immunity test levels (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, 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 completed by a second number identifying the subdivision (example: 61000-6-1).

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-1: Testing and measurement techniques – Overview of the IEC 61000-4 series

1 Scope and object

This part of IEC 61000 gives information and guidance on the EMC basic standards and other basic EMC documents published in the IEC 61000-4 series. Those basic standards describe mainly immunity tests to be considered and applied for electric and electronic equipment, including systems.

The object of this part of IEC 61000 is to give assistance to the technical committees of IEC or other bodies, users and manufacturers in

- considering the immunity test methods applicable to their products;
- determining the immunity test methods relevant for the electromagnetic environment in which their products are intended to be used;
- specifying the parts of their products being subjected to the relevant immunity test methods.

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.

IEC 60050-161, *International Electrotechnical Vocabulary (IEV) – Part 161: Electromagnetic compatibility* (available at <<http://www.electropedia.org>>)

IEC TR 61000-1-1, *Electromagnetic compatibility (EMC) – Part 1: General – Section 1: Application and interpretation of fundamental definitions and terms*

IEC TR 61000-2-5, *Electromagnetic compatibility (EMC) – Part 2-5: Environment – Description and classification of electromagnetic environments*

IEC 61000-3-2, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

IEC 61000-3-3, *Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection*

IEC TR 61000-3-4, *Electromagnetic compatibility (EMC) – Part 3-4: Limits – Limitation of emission of harmonic currents in low-voltage power supply systems for equipment with rated current greater than 16 A*

IEC TS 61000-3-5, *Electromagnetic compatibility (EMC) – Part 3-5: Limits – Limitation of voltage fluctuations and flicker in low-voltage power supply systems for equipment with rated current greater than 75 A*