PD IEC TR 61000-1-1:2023



BSI Standards Publication

Electromagnetic compatibility (EMC)

Part 1-1: General — Application and interpretation
of fundamental definitions and terms

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National foreword

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The UK participation in its preparation was entrusted to Technical Committee GEL/210, EMC - Policy committee.

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Published by BSI Standards Limited 2023

ISBN 978 0 539 18883 7

ICS 33.100.01

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This Published Document was published under the authority of the Standards Policy and Strategy Committee on 28 February 2023.

Amendments/corrigenda issued since publication

Date	Text affected

IEC TR 61000-1-1

Edition 2.0 2023-02

TECHNICAL REPORT

colour inside

BASIC EMC PUBLICATION

Electromagnetic compatibility (EMC) – Part 1-1: General – Application and interpretation of fundamental definitions and terms

INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 33.100.01

ISBN 978-2-8322-6435-5

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CONTENTS

FOREWORD 4
1 Scope 7
2 Normative references 7
3 Terms, definitions and abbreviated terms 7
3.1 Terms and definitions 7
3.2 Abbreviated terms 10
4 The electromagnetic environment 10
4.1 General 10
4.2 Coupling between emitting and susceptible devices 11
5 Application of EMC terms and definitions 12
5.1 General 12
5.2 Relation between various types of levels 12
5.2.1 Emissions and immunity level (and limit) 12
5.2.2 Compatibility level 13
5.2.3 Examples to illustrate the concepts of using levels and limits 14
5.3 Probability aspects and margins 16
5.3.1 Compatibility levels and uncertainties 16
5.3.2 Standardized test 17
5.3.3 In situ test – Superposition 18
5.3.4 Lack of data 20
6 Models and their limitations 21
6.1 General 21
6.2 Source models 21
6.2.1 Conducted emissions 21
6.2.2 Radiated emissions 22
6.3 Coupling models 23
6.3.1 General 23
6.3.2 Common impedance coupling 23
6.3.3 Coupling by induction 24
6.3.4 Radiative coupling 27
6.4 Susceptible device models 27
Annex A (informative) Interpretation of EMC terms and definitions 28
A.1 General 28
A.2 Units and decibels 28
A.3 Electromagnetic interference, compatibility and environment 29
A.3.1 General 29
A.3.2 Electromagnetic interference (EMI) 29
A.3.3 Electromagnetic compatibility (EMC) 30
A.3.4 The electromagnetic environment 30
A.4 Susceptibility/immunity 31
A.5 Level and limit 31
A.6 Emission and immunity 32
A.7 Compatibility level and margin 34
Annex B (informative) Standardized and in situ tests 37
Annex C (informative) Review of the historical assignment of radiated disturbance degrees 38

C.1 General 38
C.2 Theoretical analysis of radiated disturbance degrees 38
C.3 Detailed derivations 40
C.3.1 Derivation of Formula (C.4) 40
C.3.2 Derivation of Formula (C.5) 41
Bibliography 43

Figure 1 – Coupling paths between emitting and susceptible devices 11
Figure 2 – Limits and levels for a single emitter and susceptible device as a function of some independent variable (e.g., frequency) 13
Figure 3 – Emission/immunity limits and compatibility levels, with an example of emission/immunity levels for a single emitter and susceptible device as a function of some independent variable (e.g., frequency) 13
Figure 4 – Compatibility levels U_C for the odd harmonics in a public low-voltage network and examples of associated emission and immunity limits 15
Figure 5 – Limits, compatibility levels and margins, as a function of any independent variable (e.g., frequency) 17
Figure 6 – Example of the probability densities for an emission level and an immunity level, at one single value of the independent variable 18
Figure 7 – Example of superposition of disturbances 20
Figure 8 – Example of probability densities for an ultimate disturbance level (the sum of disturbance levels produced by various emitters) and the immunity levels of two types of susceptible device 20
Figure 9 – Source model for conducted emissions (source loaded by Z_{L1} and Z_{L2}) 22
Figure 10 – Electric and magnetic dipole elements 23
Figure 11 – Capacitance per unit length as a function of conductor separation 25
Figure 12 – Flux density from parallel conductors 26
Figure A.1 – The basic form of an EMI problem 29
Figure A.2 – Subdivision of EMC in its key aspects 30
Figure A.3 – Overview of various EMC terms and measuring conditions 34
Figure A.4 – Examples of probability densities $p(D)$, $p(I)$ and the resulting $p(I - D)$ 35
Figure C.1 – Problem geometry 39

Table C.1 – Radiated disturbance degrees 38

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 1-1: General – Application and interpretation of fundamental definitions and terms

FOREWORD

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IEC TR 61000-1-1 has been prepared by IEC technical committee 77: Electromagnetic compatibility. It is a Technical Report.

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

This second edition cancels and replaces the first edition published in 1992. This edition constitutes a technical revision.

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

a) the general description of the electromagnetic environment has been updated in accordance with IEC TR 61000-2-5;
b) the description of source, of potentially susceptible equipment/systems and of coupling mechanism has been updated,

c) elements from IEC TR 61000-2-3, that is intended to be withdrawn, as well as from IEC TR 61000-2-5, have been incorporated into this document.

The text of this Technical Report is based on the following documents:

Draft	Report on voting
77/586/DTR	77/587/RVDTR

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

The language used for the development of this Technical Report is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

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 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 document 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).

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 1-1: General – Application and interpretation of fundamental definitions and terms

1 Scope

This part of IEC 61000, which is a Technical Report, aims to describe and interpret various terms considered to be of basic importance to concepts and practical application in the design and evaluation of electromagnetically compatible equipment and systems.

In addition, attention is drawn to the distinction between electromagnetic compatibility (EMC) tests carried out in a standardized set-up and those carried out at other locations, for example at premises where a device, equipment or system is manufactured or at the location where a device, equipment or system is installed (in situ tests or measurements).

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 60050-161:1990, *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.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.1.1
(electromagnetic) compatibility level
specified electromagnetic disturbance level used as a reference level for co-ordination in the setting of emission and immunity limits

Note 1 to entry: By convention, the compatibility level is chosen so that there is only a small probability that it will be exceeded by the actual disturbance level. However, electromagnetic compatibility is achieved only if emission and immunity levels are controlled such that, at each location, the disturbance level resulting from the cumulative emissions is lower than the immunity level for each device, equipment and system situated at this same location.

Note 2 to entry: The compatibility level may be phenomenon, time or location dependent.

[SOURCE: IEC 60050-161:1990, 161-03-10]