



BSI Standards Publication

## Electromagnetic compatibility (EMC)

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

## National foreword

This Published Document is the UK implementation of IEC TR 61000-1-1:2023.

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 55 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
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# IEC TR 61000-1-1

Edition 2.0 2023-02

## TECHNICAL REPORT



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

**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. This 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](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/publications](http://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](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.

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## 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](http://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]