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# INTERNATIONAL STANDARD

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## Electromagnetic compatibility (EMC) – Part 5-6: Installation and mitigation guidelines – Mitigation of external EM influences

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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IEC 61000-5-6 has been prepared by subcommittee 77C: High power transient phenomena, of IEC technical committee 77: Electromagnetic compatibility. It is an International Standard.

This first edition cancels and replaces the first edition of IEC TR 61000-5-6 published in 2002. This edition constitutes a technical revision.

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

a) updating the whole document to include other HPEM environments including IEMI;
b) adding a new Annex A which provides details on the concept of EM resilience and includes information on HPEM detectors, recovery and restoration.

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

| Draft | Report on voting |
|---|---|
| 77C/339/FDIS | 77C/340/RVD |

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 International Standard 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- withdrawn, or
- revised.

**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 5-6: Installation and mitigation guidelines – Mitigation of external EM influences

## 1 Scope

This part of IEC 61000 covers guidelines for the mitigation of external electromagnetic influences impinging upon a facility or installation, aimed at ensuring electromagnetic compatibility (EMC) among electrical and electronic apparatus or systems. These influences include lightning, RF transmitters, power-line and telecom transients, high-altitude electromagnetic pulse (HEMP) and other high-power electromagnetic transients such as those from intentional electromagnetic interference (IEMI).

This document is intended for use by installers, manufacturers and users of sensitive electrical or electronic installations or systems. It applies primarily to new installations but, where economically feasible, it can be applied to extensions or modifications to existing facilities.

While the technical principles are applicable to individual equipment or apparatus, such application is not included in the scope of 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 60364 (all parts), *Low-voltage electrical installations*

IEC TR 61000-5-2, *Electromagnetic compatibility (EMC) – Part 5: Installation and mitigation guidelines – Section 2: Earthing and cabling*

IEC 61508-1, *Functional safety of electrical/electronic/programmable electronic safety-related systems – Part 1: General requirements*

IEC 62305 (all parts), *Protection against lightning*

IEEE Std 1848-2020, *Techniques and Measurement to Manage Functional Safety and Other Risks with Regards to Electromagnetic Disturbances*