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FINAL VERSION

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Electromagnetic compatibility (EMC) – Part 4-25: Testing and measurement techniques – HEMP immunity test methods for equipment and systems

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-25: Testing and measurement techniques – HEMP immunity test methods for equipment and systems

FOREWORD

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This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.

This Consolidated version of IEC 61000-4-25 bears the edition number 1.2. It consists of the first edition (2001-11) [documents 77C/113/FDIS and 77C/117/RVD], its amendment 1 (2012-03) [documents 77C/216/FDIS and 77C/218/RVD] and its amendment 2 (2019-12) [documents 77C/285/CDV and 77C/290/RVC]. The technical content is identical to the base edition and its amendments.

This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.

International Standard IEC 61000-4-25 has been prepared by subcommittee 77C: High power transient phenomena, of IEC technical committee 77: Electromagnetic compatibility.

It forms part 4-25 of IEC 61000. It has the status of a basic EMC publication in accordance with IEC Guide 107.

Annexes A, B C and D are for information only.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the stability date indicated on the IEC web site 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- withdrawn,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.

INTRODUCTION

This standard is part of the IEC 61000 series, 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 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 completed by a second number identifying the subdivision (example: 61000-6-1).

ELECTROMAGNETIC COMPATIBILITY (EMC) –

Part 4-25: Testing and measurement techniques – HEMP immunity test methods for equipment and systems

1 Scope

This part of IEC 61000 describes the immunity test levels and related test methods for electrical and electronic equipment and systems exposed to high-altitude electromagnetic pulse (HEMP) environments. It defines ranges of immunity test levels and establishes test procedures. Specifications for test equipment and instrumentation test set-up, test procedures, pass/fail criteria, and test documentation requirements are also defined by this standard. These tests are intended to demonstrate the immunity of electrical and electronic equipment when subjected to HEMP radiated and conducted electromagnetic disturbances. For radiated disturbance immunity tests, specifications are defined in this standard both for small test facilities and large HEMP simulators.

This part of IEC 61000 defines specifications for laboratory immunity tests. On-site tests performed on equipment in the final installation to verify immunity are also specified. These verification tests use the same specifications as laboratory tests, except for the climatic environmental specifications.

The objective of this part of IEC 61000 is to establish a common and reproducible basis for evaluating the performance of electrical and electronic equipment, when subjected to HEMP radiated environments and the associated conducted transients on power, antenna, and input/output (I/O) signal and control lines.

2 Normative references

The following referenced documents are indispensable for the application 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 – Chapter 161: Electromagnetic compatibility*

IEC 60038, *IEC standard voltages*

IEC 60068-1:1988, *Environmental testing – Part 1: General and guidance*

IEC 61000-2-5, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 5: Classification of electromagnetic environments.* Basic EMC publication

IEC 61000-2-9, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 9: Description of HEMP environment – Radiated disturbance.* Basic EMC publication

IEC 61000-2-10:1998, *Electromagnetic compatibility (EMC) – Part 2-10: Environment – Description of HEMP environment – Conducted disturbance*

IEC 61000-2-11, *Electromagnetic compatibility (EMC) – Part 2: Environment – Section 11: Classification of HEMP environments.* Basic EMC publication