



SLOVENSKI STANDARD
SIST EN 61000-4-25:2003/A2:2020

01-april-2020

Elektromagnetna združljivost (EMC) – 4-25. del: Preskušanje in merilne tehnike - HEMP preskušanje odpornosti za naprave in sisteme - Dopolnilo A2

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

Elektromagnetische Verträglichkeit (EMV) - Teil 4-25: Prüf- und Messverfahren - Prüfung der Störfestigkeit von Einrichtungen und Systemen gegen HEMP-Störgrößen

Compatibilité électromagnétique (CEM) - Partie- 4-25: Techniques d'essai et de mesure - Méthodes d'essai d'immunité à l'EMN-HA des appareils et des systèmes

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Ta slovenski standard je istoveten z: EN 61000-4-25:2002/A2:2020

ICS:

33.100.20 Imunost Immunity

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EUROPEAN STANDARD

EN 61000-4-25:2002/A2

NORME EUROPÉENNE

EUROPÄISCHE NORM

March 2020

ICS 33.100.99

English Version

Electromagnetic compatibility (EMC) - Part 4-25: Testing and measurement techniques - HEMP immunity test methods for equipment and systems
(IEC 61000-4-25:2001/A2:2019)

Compatibilité électromagnétique (CEM) - Partie- 4-25:
Techniques d'essai et de mesure - Méthodes d'essai
d'immunité à l'IEMN-HA des appareils et des systèmes
(IEC 61000-4-25:2001/A2:2019)

Elektromagnetische Verträglichkeit (EMV) - Teil 4-25: Prüf-
und Messverfahren - Prüfung der Störfestigkeit von
Einrichtungen und Systemen gegen HEMP-Störgrößen
(IEC 61000-4-25:2001/A2:2019)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

EN 61000-4-25:2002/A2:2020 (E)**European foreword**

The text of document 77C/285/CDV, future IEC 61000-4-25/A2, prepared by SC 77C "High power transient phenomena" of IEC/TC 77 "Electromagnetic compatibility" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61000-4-25:2002/A2:2020.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2020-10-15
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2023-01-15

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SIST EN 61000-4-25:2003/A2:2020

The text of the International Standard IEC 61000-4-25:2001/A2:2019 was approved by CENELEC as a European Standard without any modification.



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NORME INTERNATIONALE

AMENDMENT 2
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Electromagnetic compatibility (EMC) –
Part 4-25: Testing and measurement techniques – HEMP immunity test methods
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FOREWORD

This amendment has been prepared by subcommittee 77C: High power transient phenomena, of IEC technical committee 77: Electromagnetic compatibility.

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

CDV	Report on voting
77C/285/CDV	77C/290/RVC

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

The committee has decided that the contents of this amendment and the base publication 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.

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5.4.3 Small radiated test facilities

Replace the existing text with the following new text:

Small test facilities can more easily meet the desired field specifications with smaller tolerances in parameter variations than the large HEMP simulators. These small facilities will be used primarily to test relatively small equipment. Tolerances for the early-time HEMP pulse waveform over the entire parallelepiped test volume of the small test facility shall be as follows.

- The ratio of the peak electric field to the peak magnetic field shall be equal to 377Ω with a tolerance of $\pm 75 \Omega$.
- The rise time between 10 % and 90 % of the peak value shall be 2,5 ns with a tolerance of $\pm 0,5$ ns.
- The electric field shall be continuously increasing during the 10 % and 90 % rise time.
- The pulse width (the time duration between points on the leading and trailing edges of the pulse at 50 % of E_{peak}) shall be 23 ns with a tolerance of ± 5 ns.
- The magnitude of any pre-pulse on the electric field shall be equal to or less than 7 % of the magnitude of the peak field.
- Electric field reflections from the terminator of the simulator shall be less than 10 %.
- Fluctuations in the smoothed frequency spectrum of the electric field at the centre of the test volume (see 5.4.5) shall not be larger than ± 3 dB compared to the theoretical spectrum given by equation (2) in the bandwidth between 100 kHz and 300 MHz.

- At the time of the peak value of the simulated fields, other non-principal electromagnetic components shall be smaller than 10 % of the peak value of the simulated field.
- The peak electric field shall be uniform in the test volume to within the following criteria: the peak electric field within the test volume shall be within the range of E_{peak} and $E_{\text{peak}} + 6$ dB.
- To evaluate the field tolerances, electric and magnetic field measurements at the centre and eight corners of the test volume shall be performed in the absence of the EUT.

5.4.4.1 Large HEMP simulators – type I

Replace the existing text with the following new text:

For testing in the type I simulators, the peak electric field, (E_{peak}) shall be chosen from Table 1 corresponding to the immunity test level selected for the test. Tolerances for the early-time HEMP pulse over the entire parallelepiped test volume of the simulator shall be as follows.

- The ratio of the peak electric field to the peak magnetic field shall be equal to 377Ω with a tolerance of $\pm 75 \Omega$.
- The rise time between 10 % and 90 % of the peak value shall be 2,5 ns with a tolerance of $\pm 0,5$ ns.
- The electric field shall be continuously increasing during the 10 % and 90 % rise time.
- The pulse width (the time duration between points on the leading and trailing edges of the pulse at 50 % of E_{peak}) shall be 23 ns with a tolerance of -5 ns /+50 ns.
- The magnitude of any pre-pulse of the electric field shall be equal to or less than 7 % of the magnitude of the peak field.
- Electric field reflections from the terminator of the simulator shall be less than 10 %.
- Fluctuations in the smoothed frequency spectrum of the electric field at the centre of the test volume (see 5.4.5) shall not be larger than ± 10 dB compared to the theoretical spectrum given by equation (2) in the bandwidth between 1 MHz and 200 MHz.
- The peak electric field shall be uniform in the test volume to within the following criteria: the peak electric field within the test volume shall be within the range of E_{peak} and $E_{\text{peak}} + 6$ dB.
- To evaluate the field tolerances, electric and magnetic field measurements at the centre and eight corners of the test volume shall be performed in the absence of the EUT.

5.4.4.2 Large HEMP simulators – type II

Replace the existing text with the following new text:

A pre-test analysis is required for tests with type II simulators since these test facilities do not meet the radiated immunity specifications given in 5.4.2.

The specifications of type II large simulators are the same as type I, except for rise time, pulse width, and frequency spectrum specification, which are as follows:

- The rise time between 10 % and 90 % of the peak value shall be 2,5 ns with a tolerance of -0,5 ns /+7,5 ns.
- The pulse width (the time duration between points on the leading and trailing edges of the pulse at 50 % of E_{peak}) shall be 23 ns with a tolerance of 0 ns /+477 ns.
- Fluctuations in the smoothed frequency spectrum of the electric field at the centre of the test volume (see 5.4.5) shall not be larger than ± 10 dB compared to the theoretical spectrum given by equation (2) in the bandwidth between 1 MHz and 100 MHz.