



SLOVENSKI STANDARD
SIST EN IEC 61000-6-3:2021/oprA1:2023
01-maj-2023

Elektromagnetna združljivost (EMC) - 6-3. del: Osnovni standardi - Standard oddajanja motenj za opremo v stanovanjskih okoljih - Vzdrževanje razne opreme - Dopolnilo A1

Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for equipment in residential environments - Miscellaneous items on General Maintenance - Amendment 1/Fragment 1

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[SIST EN IEC 61000-6-3:2021/oprA1:2023
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Ta slovenski standard je istoveten z: EN IEC 61000-6-3:2021/prA1:2023 (Frag 1)

ICS:

33.100.10 Emisija Emission

SIST EN IEC 61000-6-3:2021/oprA1:2023 en



CIS/H/472/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER:

IEC 61000-6-3/AMD1/FRAG1 ED3

DATE OF CIRCULATION:

2023-04-07

CLOSING DATE FOR VOTING:

2023-06-30

SUPERSEDES DOCUMENTS:

CIS/H/457/CD, CIS/H/463A/CC

IEC CIS/H : LIMITS FOR THE PROTECTION OF RADIO SERVICES	
SECRETARIAT: Korea, Republic of	SECRETARY: Mr Jung Hwan Hwang
OF INTEREST TO THE FOLLOWING COMMITTEES: TC 77, CIS/A, CIS/B, CIS/D, CIS/F, CIS/I	PROPOSED HORIZONTAL STANDARD: <input type="checkbox"/> Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: <input checked="" type="checkbox"/> EMC <input type="checkbox"/> ENVIRONMENT <input type="checkbox"/> QUALITY ASSURANCE <input type="checkbox"/> SAFETY	
<input checked="" type="checkbox"/> SUBMITTED FOR CENELEC PARALLEL VOTING Attention IEC-CENELEC parallel voting The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting. The CENELEC members are invited to vote through the CENELEC online voting system.	<input type="checkbox"/> NOT SUBMITTED FOR CENELEC PARALLEL VOTING

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of

- any relevant patent rights of which they are aware and to provide supporting documentation,
- any relevant "in some countries" clauses to be included should this proposal proceed. Recipients are reminded that the enquiry stage is the final stage for submitting "in some countries" clauses. See AC/22/2007.

TITLE:

Amendment 1/Fragment 1: Electromagnetic compatibility (EMC) - Part 6-3: Generic standards - Emission standard for equipment in residential environments - Miscellaneous items on General Maintenance

PROPOSED STABILITY DATE: 2026

NOTE FROM TC/SC OFFICERS:

At the CISPR H WG1 meeting in St Peterburg, FL in 2020, it was decided to go straight to IS from CIS/H/400/CDV (and CIS/H/413/CDV) to create edition 3 of IEC 61000-6-3. In making that decision work on various comments were deferred till work started on the next revision of IEC 61000-6-3. This CDV is the continuation of that work and as such this document addresses some of the issues which were put on hold.

Some of the comments were documented on CIS/H/413/RVC, as follows:-

1. Size of equipment that can be tested at 3 m.
2. Use of common mode absorption devices (CMADs).
3. Updates to the scope
4. Some elements to be transferred from CISPR 32
5. Various typographically elements which were considered technical.

In addition, we have covered items which have been raised within the WG and by the national committees of the various document which the WG has generated.

To note, if these elements are agreed against IEC 61000-6-3, relevant changes may be implemented in future changes of both IEC 61000-6-4 and IEC 61000-6-8.

iTeh STANDARD PREVIEW (standards.iteh.ai)

[SIST EN IEC 61000-6-3:2021/oprA1:2023](https://standards.iteh.ai/catalog/standards/sist/9df1395f-4563-4fdd-99bc-5e952dc36a79/sist-en-iec-61000-6-3-2021-opra1-2023)

<https://standards.iteh.ai/catalog/standards/sist/9df1395f-4563-4fdd-99bc-5e952dc36a79/sist-en-iec-61000-6-3-2021-opra1-2023>

Clause 1. SCOPE

1. *Delete the first sentence of paragraph 4.*

2. *Replace paragraph 5 with the following:*

Equipment that have radio transmitting and/or radio reception functions are included in the scope of this document. However, the emission requirements in this document are not intended to be applicable to the intentional transmissions, their harmonics and the out of band emissions from a radio transmitter.

3. *Add the following before the notes.*

The objectives of this publication are:

1) to establish requirements that provide an adequate level of protection of radio reception in the frequency range 9 kHz to 400 GHz;

2) to establish requirements that provide an adequate level of protection against conducted and radiated electromagnetic disturbances;

3) to specify procedures to aim for the reproducibility of measurement and the repeatability of results.

4. *Replace note 1 with the following:*

NOTE 1 This document is regularly revised to account for new technologies which could require limits in additional frequency ranges

5. *Add the following note:*

NOTE 5 Conducted disturbances include unwanted emissions, harmonics of the mains frequency and voltage changes, voltage fluctuations and flicker in public low-voltage supply systems.

Clause 2. Normative References

Update or add the following references:

IEC 61000-3-2:2018, *Electromagnetic compatibility (EMC) – Part 3-2: Limits – Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)*

IEC 61000-3-2:2018/AMD1:2020

IEC 61000-3-3:2021, *Electromagnetic compatibility (EMC) – Part 3-3: Limits – Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection*

IEC 61000-4-20:2022, *Electromagnetic compatibility (EMC) – Part 4-20: Testing and measurement techniques – Emission and immunity testing in electromagnetic transverse (TEM) waveguide*

CISPR 14-1:2020, *Electromagnetic compatibility – Requirements for household appliances, electric tools and similar apparatus – Part 1: Emission*

CISPR 16-1-1:2010, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus*

CISPR 16-1-1:2010/AMD1:2010

CISPR 16-1-1:2010/AMD1:2014

CISPR 16-1-1:2019, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-1: Radio disturbance and immunity measuring apparatus – Measuring apparatus*

Editors note. Both versions of CISPR 16-1-1 are being used within the document.

CISPR 16-1-4:2019, *Specification for radio disturbance and immunity measuring apparatus and methods – Part 1-4: Radio disturbance and immunity measuring apparatus – Antennas and test sites*

54 *for radiated disturbance measurements*
 55 CISPR 16-1-4:2019/AMD1:2020

56 CISPR 16-1-6:2014, *Specification for radio disturbance and immunity measuring apparatus and methods*
 57 – *Part 1-6: Radio disturbance and immunity measuring apparatus – EMC antenna calibration*
 58 CISPR 16-1-6:2014/AMD1:2017
 59 CISPR 16-1-6:2014/AMD2:2022

60 CISPR 16-2-3:2016, *Specification for radio disturbance and immunity measuring apparatus and*
 61 *methods – Part 2-3: Methods of measurement of disturbances and immunity – Radiated disturbance*
 62 *measurements*
 63 CISPR 16-2-3:2016/AMD1:2019

64 CISPR 32:2015, *Electromagnetic compatibility of multimedia equipment – Emission requirements*
 65 CISPR 32:2015/AMD1:2019

66 Radio Regulations Volume 1, Edition of 2020

67 ITU-R SM.1541-6: 08/2015, *Unwanted emissions in the out-of-band domain*

68 *In addition, update all relevant entries throughout the document.*

69

70 **Clause 3.1. Terms and definitions**

71

72 **1. Definition 3.1.9**

73

74 *replace*

75 **highest internal frequency**

76 F_x

77 highest fundamental frequency generated or used within the EUT, or the highest frequency at which it
 78 operates

79

80 *with*

81 **highest internal frequency**

82 F_x

83 highest fundamental frequency generated or used within the EUT, or the highest frequency at which it
 84 operates

85 Note 1 to entry: This includes fundamental frequencies which are solely used within an integrated circuit.

86 Note 2 to entry: This excludes intentional frequencies generated by a radio function.

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88 **2. Delete definition 3.1.15**

89

90 **3. Add the following definitions;**

91

92 **3.1.x Necessary bandwidth**

93 For a given class of emission, the width of the frequency band which is just sufficient to ensure the
 94 transmission of information at the rate and with the quality required under specified conditions.

95 [SOURCE: Radio Regulations article 1.152]

96 NOTE to entry: Emissions in this band are commonly referred to as intended emission bandwidth.

97

98 **3.1.x Intended emissions**

99 Frequency band covering the necessary bandwidth

100

101 **3.1.x Spurious emissions**

102 Emission on a frequency or frequencies which are outside the necessary bandwidth and the level of
103 which may be reduced without affecting the corresponding transmission of information. Spurious
104 emissions include harmonic emissions, parasitic emissions, intermodulation products and frequency
105 conversion products, but exclude out-of-band emissions

106 [SOURCE: Radio Regulations article 1.145]

107 **3.1.x Out-of-band emission**

108 Emission on a frequency or frequencies immediately outside the necessary bandwidth which results
109 from the modulation process, but excluding spurious emissions.

110 [SOURCE: Radio Regulations article 1.144]

111 NOTE to entry: in terms of this definition, immediately means adjacent.

112

113 **Clause 3.2. Abbreviations**

114 *add the following abbreviations:*

115

116 CMAD Common Mode Absorption Device

117 SSM Standard Site Method

118 CALTS Calibration Test Site

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121 **Clause 5. Measurements and conditions during testing**

122

123 *1. 6th paragraph*

124

125 *Replace*

126 If the EUT is part of a system, or can be connected to associated equipment, the EUT shall be tested
127 while connected to the minimum representative configuration of associated apparatus necessary to
128 exercise the ports in a similar manner to that described in CISPR 32. If the EUT has a large number of
129 similar ports or ports with many similar connections, a sufficient number shall be selected to simulate
130 actual operating conditions and to ensure that all the different types of termination are covered.

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If the EUT is part of a system, or can be connected to AE, the EUT shall be tested while connected to the minimum representative configuration of AE necessary to exercise the ports. If the EUT has a large number of similar ports or ports with many similar connections, a sufficient number shall be selected to simulate actual operating conditions and to ensure that all the different types of termination are covered.

137 *2. Table 1*

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Replace

Table 1 – Test arrangements of EUT

Intended operational arrangement(s) of EUT	Test arrangement	Remarks
Table-top only	Table-top	
Floor-standing only	Floor-standing	See table clause 3.3 ¹ for testing in a FAR
Can be floor-standing or table-top	Table-top	
Rack mounted	In a rack or table-top	
Other, for example wall mounted, ceiling mounted, handheld, body worn	Table-top	With normal orientation If the equipment is designed to be mounted on a ceiling, the downward-facing portion of the EUT may be oriented facing upward.
If a physical hazard would be caused by testing the device on a table-top, then it may be tested as floor standing and the test report shall document the decision and justification.		

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with

Table 1 – Test arrangements of EUT

Intended operational arrangement(s) of EUT	Test arrangement	Remarks
Table-top only	Table-top	
Floor-standing only	Floor-standing	
Can be floor-standing or table-top	Table-top	
Rack mounted	In a rack or table-top	
Other, for example wall mounted, ceiling mounted, handheld, body worn	Table-top	With normal orientation If the equipment is designed to be mounted on a ceiling, the downward-facing portion of the EUT may be oriented facing upward.
If a physical hazard would be caused by testing the device on a table-top, then it may be tested as floor standing and the test report shall document the decision and justification.		

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3. Paragraph after table 1

Add the following

The configuration(s) and mode(s) of operation and any special measures applied to the EUT (see Clause 6) during the measurements shall be documented in the test report.

Clause 6, Documentation for the user

delete the first bullet from the list

Editor's note .. A bulleted list is still needed because of 61000-6-3 CD fragment 3.

Clause 10, Compliance with this document

1. *1st Paragraph 1*

Delete the second sentence

165 2. *4th Paragraph*

166
167 *replace*

168
169 Equipment which fulfills the requirements across the frequency ranges specified in Table 3 to
170 Table 6, in this document is deemed to fulfill the requirements in the entire frequency range up
171 to 400 GHz.

172
173 *with*

174 Equipment which fulfills the requirements across the frequency ranges specified in Table 3 to Table 6
175 is expected to provide adequate protection to radio reception and to restrict unwanted conducted and
176 radiated electromagnetic disturbances.

177
178 **Clause 11, Emission Test Details.**

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180 1. *Bullet 5, 2nd paragraph*

181
182 *replace*

183 The unit of metres shall be used for distance and dB(μ V/m) for the limits.

184
185 *with*

186 Both distances shall be given in the same unit, such as m.

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188 2. *Bullet 8, 4th paragraph*

189
190 *replace*

191 Antennas shall be calibrated in free space conditions using facilities defined in CISPR 16-1-5:2014 and
192 CISPR 16-1-5:2014/AMD1:2016 whilst using the procedures defined in CISPR 16-1-6:2014 and
193 CISPR 16-1-6:2014/AMD1:2017.

194
195 *with*

196 Radiated electric field emission antennas shall be calibrated in free space (or near-free space)
197 conditions using facilities defined in CISPR 16-1-5:2014 and CISPR 16-1-5:2014/AMD1:2016 whilst
198 using the procedures defined in CISPR 16-1-6:2014, CISPR 16-1-6:2014/AMD1:2017 and
199 CISPR 16-1-6:2014/AMD2:2020.

200
201 EXAMPLE For hybrid antennas, in the frequency range 30 MHz-1 GHz, use a calibration test site (CALTS) in accordance with
202 clause 4.5.3 of CISPR 16-1-5:2014 and CISPR 16-1-5:2014/AMD1:2016 and the standard site method (SSM) in accordance
203 with clause 8.4 of CISPR 16-1-6:2014, CISPR 16-1-6:2014/AMD1:2017 and CISPR 16-1-6:2014/AMD2:2020.

204
205 3 *Add new item to the list above Table 2*

- 206
207 • The intended and out-of-band emissions of an active radio transmitter are excluded from the
208 test. The out-of-band frequency range in the relevant radio standard shall apply, if defined. If
209 the out-of-band frequency range is not defined in the relevant radio standard the out-of-band
210 frequency range defined in Rec. ITU-R SM.1541-6 shall apply.
211

212 4. Table 2
213
214 *replace*

Highest internal frequency (F_x)	Highest measured frequency
$F_x \leq 108$ MHz	1 GHz
$108 \text{ MHz} < F_x \leq 500$ MHz	2 GHz
$500 \text{ MHz} < F_x \leq 1$ GHz	5 GHz
$F_x > 1$ GHz	$5 \times F_x$ up to a maximum of 6 GHz

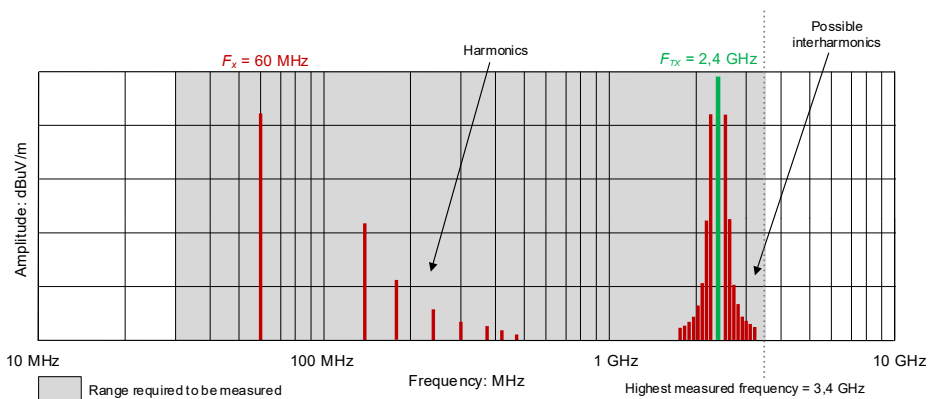
NOTE 1 Where the highest internal frequency is not known, tests shall be performed up to 6 GHz.
NOTE 2 F_x is defined in 3.1.9.

215
216 *with*
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Highest internal frequency F_x	Highest measurement frequency ^a
$F_x \leq 108$ MHz	1 GHz + F_{TX}
$108 \text{ MHz} < F_x \leq 500$ MHz	2 GHz + F_{TX}
$500 \text{ MHz} < F_x \leq 1$ GHz	5 GHz + F_{TX}
$F_x > 1$ GHz	$(5 \times F_x) + F_{TX}$

^a Measurements are not required above 6 GHz.
Where the EUT does not contain an active radio transmitter F_{TX} shall be zero.
Where the EUT contains an active radio transmitter F_{TX} shall be the highest intentional emission frequency.
For example, for an EUT without an active radio transmitter, where $F_x = 60$ MHz, this gives the highest measurement frequency of 1 GHz. For the same EUT with an active radio transmitter, where $F_{TX} = 2,4$ GHz, combining these two elements together gives the highest measured frequency of 3,4 GHz. See Figure 2.
Where F_x is unknown, tests shall be performed up to 6 GHz.
The 6 GHz frequency limitation is based upon the requirements defined in table clause 3.4.
NOTE 1 F_x is defined in 3.1.9.

218
219 *Add the following figure.*



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221
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Figure 2 - Illustration of F_{TX} and F_x