



Economic and Social Council

Distr.: General

DD MM YYYY

Original: English

Economic Commission for Europe

Inland Transport Committee

World Forum for Harmonization of Vehicle Regulations

Working Party on Lighting and Light-Signalling

[Eighty-sixth] session

Geneva, [...-... April 2022]

Item [...] of the provisional agenda

UN Regulation No. 10 (Electro-magnetic Compatibility):

Proposal for the 07 series of amendments to UN Regulation No. 10

Submitted by the expert(s) from ...*

The text reproduced below was prepared by the experts from ... with the aim The modifications to the existing text of the Regulation are marked in bold for new or strikethrough for deleted characters.

* In accordance with the programme of work of the Inland Transport Committee for 2021 as outlined in proposed programme budget for 2021 (A/75/6 (Sect.20), para 20.51), the World Forum will develop, harmonize and update UN Regulations in order to enhance the performance of vehicles. The present document is submitted in conformity with that mandate.

Paragraph 6.3.2.4., delete.

Paragraph 6.4.2.1., amend to read:

“6.4.2.1. If tests are made using the method described in Annex 6, the field strength shall be 30 volts/m rms (root mean squared) in over 90 per cent of the 20 to 2,000 MHz frequency band and a minimum of 25 volts/mrms over the whole 20 to 2,000 MHz frequency band. **The field strength shall be [10] volts/m rms (root mean squared) in over 90 per cent of the 2,000 to 6,000 MHz frequency band and a minimum of [8] volts/m rms over the whole 2,000 to 6,000 MHz frequency band.**”

Paragraph 6.10.4., delete.

Insert a new paragraph 6.5., to read:

“6.5. Specifications concerning immunity of vehicles to Electrostatic discharge.”

6.5.1. Method of testing

The method described in [ISO10605: 2008] shall be used as the method of measurement of the vehicle in areas where an ESD in standard use is possible (e.g. by touching by the driver or occupants during driving, entry into or exit from the vehicle).

6.5.2. Vehicle immunity type approval limits

Testlevel II ($\pm 8\text{kV}$) at functional status Class B, according to [ISO10605: 2008] applies.”

Paragraph 6.5., renumber to 6.6. (including any subparagraphs)

Paragraph 6.6., renumber to 6.7. (including any subparagraphs)

Paragraph 6.7., renumber to 6.8. (including any subparagraphs)

Paragraph 6.8., renumber to 6.9. (including any subparagraphs)

Old subparagraph 6.8.2.1., renumber as 6.9.2.1., and amend to read:

“6.9.2.1. If tests are made using the methods described in Annex 9, the immunity test levels shall be 60 volts/m root-mean-square (rms) for the 150 mm stripline testing method, 75 volts/mrms for the Transverse Electromagnetic Mode (TEM) cell testing method, 60 mA rms for the bulk current injection (BCI) testing method and 30 volts/mrms for the free field testing method in over 90 per cent of the 20 to 2,000 MHz frequency band, **The field strength shall be [10] volts/m rms in over 90 per cent of the 2,000 to 6,000 MHz frequency band** and to a minimum of 50 volts/mrms for the 150 mm stripline testing method, 12.5 volts/m rms for the 800 mm stripline testing method, 62.5 volts/m rms, for the TEM cell testing method, 50 mA rms for the bulk current injection (BCI) testing method and 25 volts/m rms for the free field testing method over the whole 20 to 2,000 MHz frequency band. **The field strength shall be [8] volts/m rms over the whole 2,000 to 6,000 MHz frequency band.**”

Paragraph 6.9., renumber to 6.10. (including subparagraphs)

Paragraph 6.10., renumber to 6.11. (including subparagraphs)

Paragraph 7.1.1.1., amend to read:

“7.1.1.1. A vehicle in configuration "REESS charging mode coupled to the power grid" shall be tested for radiated emissions, immunity to radiated disturbances, conducted emissions and immunity to conducted disturbances **for each available or optional charging mode and charging socket (including pantograph connections or similar).**”

Paragraph 7.1.1.2., amend to read:

“7.1.1.2. ESAs in configuration "REESS charging mode coupled to the power grid" shall be tested for radiated emissions, immunity to radiated disturbances, conducted emissions and immunity to conducted disturbances **for each available or optional charging mode and charging socket (including pantograph connections or similar).**”

Paragraph 7.7.2.1., amend to read:

“7.7.2.1. If tests are made using the method described in Annex 6, the field strength shall be 30 volts/m rms (root mean squared) in over 90 per cent of the 20 to 2,000 MHz frequency band and a minimum of 25 volts/m rms over the whole 20 to 2,000 MHz frequency band. **The field strength shall be [10] volts/m rms (root mean squared) in over 90 per cent of the 2,000 to 6,000 MHz frequency band and a minimum of [8] volts/m rms over the whole 2,000 to 6,000 MHz frequency band.**”

Paragraph 7.18.2.1., amend to read:

“7.18.2.1. If tests are made using the methods described in Annex 9, the immunity test levels shall be 60 volts/m rms (root-mean-square) ~~(rms)~~ for the 150 mm stripline testing method, 75 volts/m rms for the Transverse Electromagnetic Mode (TEM) cell testing method, 60 mA rms for the bulk current injection (BCI) testing method and 30 volts/m rms for the free field testing method in over 90 per cent of the 20 to 2,000 MHz frequency band, **The field strength shall be [10] volts/m rms in over 90 per cent of the 2,000 to 6,000 MHz frequency band** and to a minimum of 50 volts/m rms for the 150 mm stripline testing method, 12.5 volts/m rms for the 800 mm stripline testing method, 62.5 volts/m rms, for the TEM cell testing method, 50 mA rms for the bulk current injection (BCI) testing method and 25 volts/m rms for the free field testing method over the whole 20 to 2,000 MHz frequency band. **The field strength shall be [8] volts/m rms over the whole 2,000 to 6,000 MHz frequency band.**”

Annex 5, paragraph 1.3., delete.

... renumbering of subsequent subparagraph 1.4. needed ...

In Annex 6, Paragraph 1.3, replace value of “2,000 MHz” by “6,000 MHz”

In Annex 6, Paragraph 4.1, replace value of “2,000 MHz” by “6,000 MHz”

In Annex 6, Paragraph 4.1.1, replace value of “2,000 MHz” by “6,000 MHz”

In Annex 9, Paragraph 3.1, replace value of “2,000 MHz” by “6,000 MHz”

In Annex 9, Paragraph 3.2, replace value of “2,000 MHz” by “6,000 MHz”

To be evaluated:

Radiated Emission based on [CISPR36 : 2020]for electric and hybrid vehicles

Radiated Immunity below 20MHz,

- *based on e.g. [IEC60601: YYYY] AMD1 ED4 Proximity magnetic fields (e.g. 85kHz, 65 A/m for vehicles without EVPC/MF-WPT, 650 A/m for vehicles with EVPC/MF-WPT)*
- *Railway standards?[EN 50121-5??] =>[150 KHz – 20 MHz]*
- *Or cover by means of EN61000-4-8 (Proximity) based on railway demands on e.g. signaling, fixed power installation, telecommunication in the near vicinity of railroad (EN50121-4 and EN50121-5) both immunity demands on 0, 16.7 & 50 Hz (Levels 300, 100, 100 A/m) and include the 85kHz 65 A/m for vehicles without EVPC/MF-WPT, 650 A/m for vehicles with EVPC/MF-WPT)EVPC.*
- *Additionally in REESS charging mode connected to the power grid EN61000-4-6 Common Mode Current Injection on mains 150kHz-80MHz 10V.*

Addition to Annex IIa and IIb: State firmware and/or software version as being PARTS.

INITIAL DRAFT - FOR INFORMATION ONLY - WORK IN PROGRESS