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| UNECE GRE IWG EMCChange Proposal Form**(One major comment per form.)** **(Shaded blocks for the use by the IWG Secretary only.)** |
| **IWG document Number:** | **IWG-EMC-xx-xx** | **Date:** 19.05.2025 |
| **Proposer’s Name, Affiliation, and E-mail:**BundesnetzagenturThilo.Kootz@bnetza.deNikola.Kiwull@bnetza.de | **Paragraph:***Annex 4, 4.2**Annex 7, 4.2* | **Page:**E/ECE/324/Add.9/Rev.6 Pages 65 and 94  |
| **Summary of Change** (25 words or less)**:**Upgrade to the radiated emission testing requirements in CISPR 12 Ed.7.0 (as requested in *IWG-EMC-45-17*) |
| **Reason for Change** (Justification)**:**In contrast to vehicles with internal combustion engine (ICE), which are electromagnetically passive when not in use, e-mobility has introduced a new mode of operation – charging ‑ which is active over long periods of time (e.g. power shared or bidirectional charging). This also happens very close to potential radio disturbance victims such as broadcast receivers in homes.Moreover, the correlation factor of 20 dB between peak and quasi-peak-detector has been defined based on measurement data on vehicles with high voltage ignition and is thus not appropriate when used for testing electric vehicles. There was a correction in the upcoming version of CISPR 12 and UN ECE Regulation No.10 should also be updated immediately.  |
| **Original text:***Annex 4 - Method of measurement of radiated broadband electromagnetic emissions from vehicles* *Annex 7 - Method of measurement of radiated broadband electromagnetic emissions from electrical/electronic sub-assemblies (ESAs)**(in both cases) Paragraph 4.2*“Measurements can be performed with either quasi-peak or peak detectors. The limits given in paragraphs 6.2. and 6.5. of this Regulation are for quasi-peak detectors. If peak detectors are used a correction factor of 20 dB as defined in CISPR 12 shall be applied.” |
| **Revise To:***Add the following definitions in Clause 2 Definitions*2.XX “*internal combustion engine (ICE)”* means a machine converting thermal energy derived from a liquid fuel substance to mechanical energy and supplying mechanical power through a rotating shaftNote : Example fuels include refined petroleum products, such as gasoline or diesel, or ethanol.2.XX *“electric motor (EM)”* means an electrical machine converting electrical energy to mechanical energy and supplying mechanical power through a rotating shaft*Option 1*2.XX “*hybrid electric vehicle”*vehicle equipped with both ICE and one or multiple EMs that are used for propulsion Note: The ICE and EM propulsion can operate individually or in a combined mode depending on the hybrid system.*This is the definition from CISPR 12 ED7 – alternatively it could be referenced to definition 1.12 from ECE/TRANS/WP.29/78/Rev.7**Option 2*2.XX “*hybrid electric vehicle”*means a hybrid vehicle that, for the purpose of mechanical propulsion, draws energy from both of the following on-vehicle sources of stored energy/power:(a) A consumable fuel,(b) An electrical energy/power storage device (e.g. battery, capacitor, flywheel/generator, etc.);*Note by the secretariat:* please also consider ECE/TRANS/WP.29/1121 (Mutual Resolution No. 2) containing Vehicle Propulsion System Definitions.2.XX ”Vehicle groups” are:(a) Group 1: vehicles with ICE and hybrid electric vehicles when the ICE is operating (used either for propulsion or power generation). Hybrid electric vehicles with small energy storage capacity, where the ICE starts and stops frequently without user control, are considered Group 1.(b) Group 2: vehicles with EM propulsion, including hybrid electric when the ICE is not operating. Group 2 excludes items listed as part of Group 3.(c) Group 3: vehicles with EM propulsion, including hybrid when the ICE is not operating, that are in one of the following categories: • eTransporters (see IEC 63281-1:2023); • electrically power assisted cycles (EPAC) as defined in ISO/TS 4210‑10:2020, which are equipped with an EM having a maximum continuous rated power of less than or equal to 1 000 W, where the output of the EM is cut off when the cyclist stops pedalling and is otherwise progressively reduced and finally cut off before the vehicle speed reaches 45 km/h; – The maximum continuous rated power is defined at the driven wheel of the EPAC according to the method described in ISO/TS 4210‑10:2020. • any other vehicles designed to be used in areas where pedestrians can be found in the same driving path.*Replace Annex 4, 4.2 by* Test requirements are dependent on the vehicle group. On vehicles of Group 1 and Group 2 in configuration other than "REESS charging mode coupled to the power grid" measurements may be performed with either quasi-peak or peak detector.The limits given in paragraph 6.2. of this Regulation are for quasi-peak detectors. If peak detectors are used for Group 1 a customizing factor of 20 dB and for Group 2 a customizing factor of 13 dB as defined in CISPR 12:2025 may be applied. Vehicles of Group 3 may be performed with either quasi-peak or peak detector. For that group the limits given in paragraph 6.2 apply for both detectors.For vehicles of all groups in configuration “REESS charging mode coupled to the power grid" measurements shall be performed with quasi-peak detector. The quasi-peak detector limits given in paragraph 6.2. of this Regulation shall be applied.*Replace Annex 7, 4.2 by* Test requirements for ESAs are dependent on the vehicle group they may be subsequently fitted to.On ESAs which may be subsequently fitted to vehicles of Group 1 and Group 2 involved in configuration other than "REESS charging mode coupled to the power grid" measurements may be performed with either quasi-peak or peak detector. The limits given in paragraph 6.5. of this Regulation are for quasi-peak detectors. If peak detectors are used for Group 1 a customizing factor of 20 dB and for Group 2 a customizing factor of 13 dB as defined in CISPR 12:2025 may be applied.Measurement on ESAs which may be subsequently fitted to vehicles of Group 3 may be performed with either quasi-peak or peak detector. For that group the limits given in paragraph 6.5 apply for both detectors.On ESAs involved in configuration “REESS charging mode coupled to the power grid" measurements shall be performed with quasi-peak detector. The quasi-peak detector limits given in paragraph 6.5. of this Regulation shall be applied.*Add the following standard to Appendix 1*CISPR 12 “Vehicles, boats and devices with internal combustion engines or traction batteries - Radio disturbance characteristics - Limits and methods of measurement for the protection of off-board receivers, seventh edition 2025 *(to be checked when published)* |
| **As Modified Text:** |
|  | **Accepted As Written** |  | **Withdrawn** |
|  | **Accepted As Modified** |  | **Rejected** |
|  | **Deferred** |  | **Other** |
| **Rejection Reason / Comments:** |
| **Proposal Deferred To:** |
| **Proposal Disposition By:** | **Date:** |