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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:** January 6th, 2025 |
| **Proposer’s Name, Affiliation, and E-mail:**CLEPA SEG EMCKlaus Pilatus (CLEPA, consultant.tr2@clepa.be)Andrea Scholl (Bosch, andreamarie.scholl@de.bosch.com, chair of the SEG EMC) | **Paragraph:**Paragraph 6.8.2.1Paragraph 7.18.2.1 | **Page:**[ECE/TRANS/WP.29/2024/90](https://unece.org/sites/default/files/2024-09/ECE-TRANS-WP.29-2024-90e_0.pdf), pp. 7&15 |
| **Summary of Change** (25 words or less)**:**Tables 2a/b and 19a/b should include a more precise frequency allocation of each test method in line with international standardization to avoid misunderstanding. |
| **Reason for Change** (Justification)**:**Tables 2a/b and 19a/b currently summarize ESA test methods and only distinguish between the frequency range below and above 2 GHz. This may be misleading as some test methods, e.g. Stripline, the TEM cell and BCI, are not suitable for higher frequency ranges as indicated by the according international standard developed by a group of technical experts.In order to avoid any misunderstanding, the frequency allocation for each test method should be more precise, following the current requirements of international standardization. |
| **Original text:****Paragraph 6.8.2.1, Table 2a**

|  |  |
| --- | --- |
|   | *Test Level in over 90 per cent of the 20 to 6,000 MHz frequency band* |
| *Frequency range* | *Stripline* | *TEM cell* | *BCI* | *ALSE* | *Reverberation chamber* |
| 20 to 2,000 MHz | 60 V/m | 75 V/m | 60 mA | 30 V/m | 21 V/m |
| 2,000 to 6,000 MHz | Not applicable | Not applicable | Not applicable | 10 V/m | 7 V/m |

**Paragraph 6.8.2.1, Table 2b**

|  |  |
| --- | --- |
|   | *Minimum Test Level over the whole 20 to 6,000 MHz frequency band* |
| *Frequency range* | *Stripline* | *TEM cell* | *BCI* | *ALSE* | *Reverberation chamber* |
| 20 to 2,000 MHz | 50 V/m | 62,5 V/m | 50 mA | 25 V/m | 18 V/m |
| 2,000 to 6,000 MHz | Not applicable | Not applicable | Not applicable | 8 V/m | 6 V/m |

**Paragraph 7.18.2.1, Table 19a\***

|  |  |
| --- | --- |
|   | *Test Level in over 90 per cent of the 20 to 6,000 MHz frequency band* |
| *Frequency range* | ***~~Stripline~~*** | ***~~TEM cell~~*** | *BCI* | *ALSE* | ***~~Reverberation chamber~~*** |
| 20 to 2,000 MHz | **~~60 V/m~~** | **~~75 V/m~~** | 60 mA | 30 V/m | **~~21 V/m~~** |
| 2,000 to 6,000 MHz | **~~Not applicable~~** | **~~Not applicable~~** | Not applicable | 10 V/m | **~~7 V/m~~** |

**Paragraph 7.18.2.1, Table 19b\***

|  |  |
| --- | --- |
|   | *Minimum Test Level over the whole 20 to 6,000 MHz frequency band* |
| *Frequency range* | ***~~Stripline~~*** | ***~~TEM cell~~*** | *BCI* | *ALSE* | ***~~Reverberation chamber~~*** |
| 20 to 2,000 MHz | **~~50 V/m~~** | **~~62,5 V/m~~** | 50 mA | 25 V/m | **~~18 V/m~~** |
| 2,000 to 6,000 MHz | **~~Not applicable~~** | **~~Not applicable~~** | Not applicable | 8 V/m | **~~6 V/m~~** |

\*as requested in [IWG-EMC-45-05](https://wiki.unece.org/download/attachments/270368781/IWG-EMC-45-05-Rev.1%20%28CLEPA%29%20DRAFT%20ECE-TRANS-WP.29-2024-90_Editorials-for-Rev7.docx?api=v2)  |
| **Revise To:****Paragraph 6.8.2.1, Table 2a**

|  |  |
| --- | --- |
|   | *Test Level in over 90 per cent of the 20 to 6,000 MHz frequency band* |
| *Stripline* | *TEM cell* | *BCI* | *ALSE* | *Reverberation chamber* |
| Frequency range below 2 GHz | 20 – 400 MHz | 20 – 200 MHz | 20 – 400 MHz | 80 – 2,000 MHz | LUF\* – 2,000 MHz |
| Test level below 2 GHz | 60 V/m | 75 V/m | 60 mA | 30 V/m | 21 V/m |
| Frequency range above 2 GHz | Not applicable | Not applicable | Not applicable | 2,000 – 6,000 MHz | 2,000 – 6,000 MHz |
| Test level above 2 GHz | Not applicable | Not applicable | Not applicable | 10 V/m | 7 V/m |

**Paragraph 6.8.2.1, Table 2b**

|  |  |
| --- | --- |
|   | *Minimum Test Level over the whole 20 to 6,000 MHz frequency band* |
| *Stripline* | *TEM cell* | *BCI* | *ALSE* | *Reverberation chamber* |
| Frequency range below 2 GHz | 20 – 400 MHz | 20 – 200 MHz | 20 – 400 MHz | 80 – 2,000 MHz | LUF\* – 2,000 MHz |
| Test level below 2 GHz | 50 V/m | 62,5 V/m | 50 mA | 25 V/m | 18 V/m |
| Frequency range above 2 GHz | Not applicable | Not applicable | Not applicable | 2,000 – 6,000 MHz | 2,000 – 6,000 MHz |
| Test level above 2 GHz | Not applicable | Not applicable | Not applicable | 8 V/m | 6 V/m |

\*LUF would need to be defined in Part 2 in accordance with ISO 11452-11:2010*“lowest frequency for the reverb chamber method for which the field uniformity requirements are met”***Paragraph 7.18.2.1, Table 19a**

|  |  |
| --- | --- |
|   | *Test Level in over 90 per cent of the 20 to 6,000 MHz frequency band* |
| *BCI* | *ALSE* |
| Frequency range below 2 GHz | 20 – 400 MHz | 80 – 2,000 MHz |
| Test level below 2 GHz | 60 mA | 30 V/m |
| Frequency range above 2 GHz | Not applicable | 2,000 – 6,000 MHz |
| Test level above 2 GHz | Not applicable | 10 V/m |

**Paragraph 7.18.2.1, Table 19b**

|  |  |
| --- | --- |
|   | *Test Level in over 90 per cent of the 20 to 6,000 MHz frequency band* |
| *BCI* | *ALSE* |
| Frequency range below 2 GHz | 20 – 400 MHz | 80 – 2,000 MHz |
| Test level below 2 GHz | 60 mA | 30 V/m |
| Frequency range above 2 GHz | Not applicable | 2,000 – 6,000 MHz |
| Test level above 2 GHz | Not applicable | 10 V/m |

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| **As Modified Text:** |
|  | **Accepted As Written** |  | **Withdrawn** |
|  | **Accepted As Modified** |  | **Rejected** |
|  | **Deferred** |  | **Other** |
| **Rejection Reason / Comments:** |
| **Proposal Deferred To:** |
| **Proposal Disposition By:** | **Date:** |