**IEEE P802.15**

**Wireless Personal Area Networks**

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| Project | IEEE P802.15 Working Group for Wireless Personal Area Networks (WPANs) |
| Title | Proposed suitable frequency ranges in section 5 of a preliminary draft new Report ITU-R SM.[THZ.TREND] |
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| Abstract | The aim of this contribution is to provide suitable frequency ranges which may be interest to IEEE 802.15.3d standard. |
| Purpose | Proposing to add several frequency ranges in section 5 of a preliminary draft new Report ITU-R SM.[THZ.TREND], taking into account propagation characteristics of radio waves. |
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At the last IEEE802.15.3d meeting in Athens, the discussion of frequency ranges of interest for IEEE802.15.3d were postponed to the next teleconference. This contribution provides several suitable frequency ranges which may be utilized for wireless devices such as IEEE802.15.3d.

Figure 1 shows gaseous attenuation characteristics in the frequency range from 100 GHz to 1000 GHz [1]. There are the specific resonant attenuation by oxygen and water vapour. The contiguous band is simply estimated by avoiding the resonance attenuation lines. Table 1 summarizes the suitable frequency range and the contiguous bandwidth.

IEEE802.15.3d is invited to consider these frequency ranges to be included in section 5 of a preliminary draft new Report ITU-R SM.[THZ.TREND].



Figure 1 Attenuation characteristics and available contiguous bandwidth in the frequency range from 100 GHz to 1000 GHz.

Table 1 Suitable frequency range and contiguous bandwidth

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| Frequency range (GHz) | Contiguous bandwidth (GHz) | Loss (dB/km) |
| 200-320 | 120 | < 10 |
| 275-320 | 45 | < 10 |
| 335-360 | 25 | < 10 |
| 275-370 | 95 | < 100 |
| 380-445 | 65 | < 100 |
| 455-525 | 70 | < 100 |
| 625-725 | 100 | < 100 |
| 780-910 | 130 | < 100 |

**Reference**

[1] Recommendation ITU-R P.676-9, “Attenuation by atmospheric gases”