IEEE P802.11
Wireless LANs

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| 11be PDT: Transmit spectral mask |
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Abstract

This contribution proposes the draft text on transmit spectral mask for TGbe D0.1.

R0: main changes comparing with 11ax include:

* Add place holders for 320MHz PPDU mask, puncture mask.
* Removed the 1st paragraph.
* Highlighted are the main changes comparing with 11ax.

R1: updated based on comments from TTT members.

35.3.17.1 Transmit spectral mask

The bandwidth of the spectral mask applied to an EHT MU PPDU and EHT TB PPDU shall be determined by the bandwidth indicated in the Bandwidth subfield of the U-SIG field.

NOTE 1—In the presence of additional regulatory restrictions, the device has to meet both the regulatory requirements and the mask defined in this subclause.

NOTE 2—Transmit spectral mask figures in this subclause are not drawn to scale.

NOTE 3—For rules regarding transmit center frequency leakage levels, see 34.3.17.x (Transmit center frequency leakage). The spectral mask requirements in this subclause do not apply to the RF LO.

For a 20 MHz mask PPDU of EHT format, the interim transmit spectral mask shall have a 0 dBr (dB relative to the maximum spectral density of the signal) bandwidth of 19.5 MHz, –20 dBr at 10.5 MHz frequency offset, –28 dBr at 20 MHz frequency offset, and –40 dBr at 30 MHz frequency offset and above. The interim transmit spectral mask for frequency offsets between 9.75 and 10.5 MHz, 10.5 and 20 MHz, and 20 and 30 MHz shall be linearly interpolated in dB domain from the requirements for 9.75 MHz, 10.5 MHz, 20 MHz, and 30 MHz frequency offsets. The transmit spectrum shall not exceed the maximum of the interim transmit spectral mask and –53 dBm/MHz at any frequency offset. Figure 35-x1 (Example transmit spectral mask for a 20 MHz mask PPDU) shows an example of the resulting overall spectral mask when the –40 dBr spectrum level is above –53 dBm/MHz.

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| Figure 35-x1 Example transmit spectral mask for a 20 MHz mask PPDU |

For a 40 MHz mask PPDU of EHT format, the interim transmit spectral mask shall have a 0 dBr (dB relative to the maximum spectral density of the signal) bandwidth of 39 MHz, –20 dBr at 20.5 MHz frequency offset, –28 dBr at 40 MHz frequency offset, and –40 dBr at 60 MHz frequency offset and above. The interim transmit spectral mask for frequency offsets in between 19.5 and 20.5 MHz, 20.5 and 40 MHz, and 40 and 60 MHz shall be linearly interpolated in dB domain from the requirements for 19.5 MHz, 20.5 MHz, 40 MHz, and 60 MHz frequency offsets. The transmit spectrum shall not exceed the maximum of the interim transmit spectral mask and –56 dBm/MHz at any frequency offset greater than 19.5 MHz. Figure 35-x2 (Example transmit spectral mask for a 40 MHz mask PPDU) shows an example of the resulting overall spectral mask when the –40 dBr spectrum level is above –56 dBm/MHz.

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| Figure 35-x2 Example transmit spectral mask for a 40 MHz mask PPDU |

For an 80 MHz mask PPDU of EHT format, if the preamble puncturing is not applied, the interim transmit spectral mask shall have a 0 dBr (dB relative to the maximum spectral density of the signal) bandwidth of 79 MHz, –20 dBr at 40.5 MHz frequency offset, –28 dBr at 80 MHz frequency offset, and –40 dBr at 120 MHz frequency offset and above. The interim transmit spectral mask for frequency offsets in between 39.5 and 40.5 MHz, 40.5 and 80 MHz, and 80 and 120 MHz shall be linearly interpolated in dB domain from the requirements for 39.5 MHz, 40.5 MHz, 80 MHz, and 120 MHz frequency offsets. The transmit spectrum shall not exceed the maximum of the interim transmit spectrum mask and –59 dBm/MHz at any frequency offset. Figure 35-x3 (Example transmit spectral mask for an 80 MHz mask PPDU) shows an example of the resulting overall spectral mask when the –40 dBr spectrum level is above –59 dBm/MHz.

For an 80 MHz mask PPDU of EHT format, if the preamble puncturing is applied, the spectral mask is subject to the mask defined in Figure 35-x3 and the additional restrictions defined for preamble puncturing in clause 35.3.19.1.

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| Figure 35-x3 Example transmit spectral mask for an 80 MHz mask PPDU |

For a 160 MHz mask PPDU of EHT format, if the preamble puncturing is not applied, the interim transmit spectral mask shall have a 0 dBr (dB relative to the maximum spectral density of the signal) bandwidth of 159 MHz, –20 dBr at 80.5 MHz frequency offset, –28 dBr at 160 MHz frequency offset, and –40 dBr at 240 MHz frequency offset and above. The interim transmit spectral mask for frequency offsets in between 79.5 and 80.5 MHz, 80.5 and 160 MHz, and 160 and 240 MHz shall be linearly interpolated in dB domain from the requirements for 79.5 MHz, 80.5 MHz, 160 MHz, and 240 MHz frequency offsets. The transmit spectrum shall not exceed the maximum of the interim transmit spectrum mask and –59 dBm/MHz at any frequency offset. Figure 35-x4 (Example transmit spectral mask for a 160 MHz mask PPDU) shows an example of the resulting overall spectral mask when the –40 dBr spectrum level is above –59 dBm/MHz.

For a 160 MHz mask PPDU of EHT format, if the preamble puncturing is applied, the spectral mask is subject to the mask defined in Figure 35-x4 and the additional restrictions defined for preamble puncturing in clause 35.3.19.1.1.

For a 320 MHz mask PPDU of EHT format, if the preamble puncturing is not applied, the spectral mask is TBD

For a 320 MHz mask PPDU of EHT format, if the preamble puncturing is applied, the spectral mask is TBD

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| Figure 35-x4 Example transmit spectral mask for a 160 MHz mask PPDU |

For an 80+80 MHz mask PPDU of EHT format, the mask is TBD.

For a 160+160 MHz mask PPDU of EHT format, the mask is TBD.

Measurements shall be made using a 100 kHz resolution bandwidth and a 7.5 kHz video bandwidth.

35.3.17.1.1 Additional restrictions for preamble puncturing

TBD