MPE Calculation

FCC ID: 2ANA9-T300

Remark: Average ≤ Peak, which means that calculating the power density applying Peak power is worst case. The worst case operation mode generating the highest power in each frequency range is taken for calculation.

For WiFi (max. 15.62 dBm for 11b (incl.11g/n-20) and max. 12.98 dBm for 11n-40) the highest measured power value is 15.62 dBm. The max. tune up power as defined in the operational description is 15 +/- 1 = 16 dBm is taken for calculation:

Frequency range: **2412-2462** MHz Typical use distance: d ≥ 20 cm

Power density limit for mobile devices at 2.4 GHz: S ≤ 1 mW/cm^2

Maximum measured conducted power (Peak): $P_{conducted}$ = **16** dBm = 39.81 mW

Antenna Gain: G = **1** dBi = 1.26 on the linear scale

Calculation: $P_{radiated} = P_{conducted} + G_{linear}$ = 16 dBm + 1 dBi = 17 dBm = 50.12 mW

Power density S = $(P_{radiated}) / (4\pi \times d^2)$ = 50.12 / 5026 = 0.0100 mW/cm^2 < 1 => below limit

For Bluetooth (max. 4.4 dBm for BT and max. 1.41 dBm for BT-LE) the highest measured power is 4.4 dBm. The max. tune up power as defined in the operational description is 4 +/- 1 = 5 dBm taken for calculation:

Frequency range: **2402-2480** MHz Typical use distance: d ≥ 20 cm

Power density limit for mobile devices at 2.4 GHz: S ≤ 1 mW/cm^2

Maximum measured conducted power (Peak): $P_{conducted}$ = **5** dBm = 3.16 mW

Antenna Gain: G = **1** dBi = 1.26 on the linear scale

Calculation: $P_{radiated} = P_{conducted} + G_{linear}$ = 5 dBm + 1 dBi = 6 dBm = 3.98 mW

Power density S = $(P_{radiated}) / (4\pi \times d^2)$ = 3.98 / 5026 = 0.0008 mW/cm^2 < 1 => below limit

Note that BT and BT-LE cannot transmit simultaneously. However, WiFi and Bluetooth can transmit simultaneously, where the sum of the worst case powers and sum of the related calculated power densities ((0.01+0.0008=) 0.0108 < 1) both remain far below the limit.