FCC MPE Calculation

FCC ID: UWT-SENSORONE

As specified in Table 1B of 47 CFR 1.1310- Limits for Maximum Permissible Exposure (MPE), applying the Limits for General Population/ Uncontrolled Exposure. The EUT will only be used with a separation of 20cm or greater between the antenna and nearby persons and can therefore be considered a mobile transmitter per 47 CFR 2.1091 (b).

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 11b/g/n(HT20):

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): $P_{conducted}$ = **17.52** dBm = 56.49 mW

Antenna Gain: G = **2**   dBi = 1.58 on the linear scale

Calculation: $P_{radiated}$ = $P_{conducted}$ + G_{linear} = 17.52 dBm + 2   dBi = 19.52 dBm = 89.54   mW

Power density S = ($P_{radiated}$) / (4π x d^2) = 89.54   / 5026 = 0.0178   mW/cm^2 < 1 => below limit

For WiFi 11n(HT40):

Frequency range: **2422-2452** 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): $P_{conducted}$ = **12.64** dBm = 18.37 mW

Antenna Gain: G = **2**   dBi = 1.58 on the linear scale

Calculation: $P_{radiated}$ = $P_{conducted}$ + G_{linear} = 12.64 dBm + 2   dBi = 14.64 dBm = 29.11   mW

Power density S = ($P_{radiated}$) / (4π x d^2) = 29.11   / 5026 = 0.0058   mW/cm^2 < 1 => below limit