MPE Calculation

FCC ID: X4Y310

Typical use distance: d ≥ 20 cm
Power density limit for mobile devices at 2.4 GHz: $S \leq 1$ mW/cm^2
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.

Frequency range: 2412-2462MHz
Maximum measured conducted power (Peak): $P_{conducted}$ = 15.37 dBm
Antenna Gain: G = 2 dBi
Calculation: $P_{radiated}$ = $P_{conducted}$ + G_{linear} = 15.37 dBm + 3 dBi = 18.37 dBm = 68.71 mW
Power density S = ($P_{radiated}$) / (4π x d^2) = 68.71 / 5026 = 0.0137 mW/cm^2 which is below limit, pass.

Frequency range: 2422-2452MHz
Maximum measured conducted power (Peak): $P_{conducted}$ = 10.86 dBm
Antenna Gain: G = 2 dBi
Calculation: $P_{radiated}$ = $P_{conducted}$ + G_{linear} = 10.86 dBm + 2 dBi = 12.86 dBm = 19.32 mW
Power density S = ($P_{radiated}$) / (4π x d^2) = 19.32 / 5026 = 0.00385 mW/cm^2 which is below limit, pass.