MPE Calculation

FCC ID: Z7ZMAXMEDIAWIFI2

Typical use distance: d ≥ 20 cm
Power density limit for mobile devices at 2.4 and 5 GHz: S ≤ 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.

For DTS:

Frequency range: 2412-2462MHz
Frequency range: 2422-2452MHz
Frequency range: 5745-5825MHz
Frequency range: 5755-5755MHz

The highest peak power measured in all these bands is 19.88 dBm, and we take this value as worst case for calculation. The antennas used in these bands are 0 dBi, 4.2 dBi, and 3.6 dBi, and 6.91 for n mode (see RF report). We take the worst case for calculation. We combine both worst case valuse to prove the device stays in any case under the limit. Note that the calculated radiated powers may not exist in reality, but they indicate compliance to the limit only:

Maximum measured conducted power (Peak): $P_{conducted}$ = 19.88 dBm
Antenna Gain: G = 6.91 dBi
Calculation: $P_{radiated} = P_{conducted} + G_{linear}$ = 19.88 dBm + 6.91 dBi = 26.97 dBm = 477.53 mW
Power density S = $(P_{radiated}) / (4\pi \times d^2)$ =0.096 mW/cm^2 which is below limit, pass.

For UNI:

Frequency range: 5180-5240MHz
Frequency range: 5190-5230MHz

The highest peak power measured in all these bands is 19.88 dBm, and we take this value as worst case for calculation. The antennas used in these bands are 0 dBi, 4.2 dBi, and 3.6 dBi, and 6.91 for n mode (see RF report). We take the worst case for calculation. We combine both worst case valuse to prove the device stays in any case under the limit. Note that the calculated radiated powers may not exist in reality, but they indicate compliance to the limit only::

Maximum measured conducted power (Peak): $P_{conducted}$ = 9.08 dBm
Antenna Gain: G = 6.91 dBi
Calculation: $P_{radiated} = P_{conducted} + G_{linear}$ = 9.08 dBm + 6.91 dBi = 15.99 dBm = 39.72 mW
Power density S = $(P_{radiated}) / (4\pi \times d^2)$ =0.0079 mW/cm^2 which is below limit, pass.

Remark: this card cannot transmit simultaneously in more than one band.