MPE Calculation

FCC ID: ZCBHYIPC-545

RF Exposure Requirements: 47CFR§1.1307(b)

RF Radiation Exposure Limits: 47CFR§1.1310

RF Radiation Exposure Guidelines: 47CFR§2.1091

EUT Frequency Band: 2412-2462MHz for 802.11b/g, 802.11n/HT20
2422-2452MHz for 802.11n/HT40

Limits for General Population/Uncontrolled Exposure in the band of: 1500 – 100000MHz

Power Density Limit: 1.0mW/cm^2;

Equation: $S=PG/4\pi R^2$

Where, S=Power Density

P=Power Input to Antenna

G=Antenna Gain

R=distance to the center of radiated antenna

For 802.11b-High Channel (2462MHz):
Power=16.12dBm, Antenna Gain=2.5dBi, Prediction distance 20cm
S=(40.93*1.78)/(4*3.14*20^2)=0.0145 mW/cm^2

For 802.11g-Low Channel (2412MHz):
Power=13.01dBm, Antenna Gain=2.5dBi, Prediction distance 20cm
S=(20.00*1.78)/(4*3.14*20^2)=0.0071 mW/cm^2

For 802.11n/HT20-Middle Channel (2437MHz):
Power=15.45dBm, Antenna Gain=2.5dBi, Prediction distance 20cm
S=(35.08*1.78)/(4*3.14*20^2)=0.0124 mW/cm^2

For 802.11n/HT40-Low Channel (2422MHz):
Power=9.48dBm, Antenna Gain=2.5dBi, Prediction distance 20cm
S=(8.87*1.78)/(4*3.14*20^2)=0.0031 mW/cm^2

Result

The above result had shown that device complied with 1.0mW/cm^2 Power density requirement for distance of 20 cm.

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