

# MPE Calculation

FCC ID: ZCBHYIPC-540D04W

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  
Limits for General Population/Uncontrolled Exposure in the band of: 1500 – 100000MHz  
Power Density Limit: 1.0mW/cm<sup>2</sup>;

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-Low Channel (2412MHz):  
Power=16.81dBm, Antenna Gain=3dBi, Prediction distance 20cm  
 $S = (48.0 * 2.0) / (4 * 3.14 * 20 * 20) = 0.0191 \text{ mW/cm}^2$

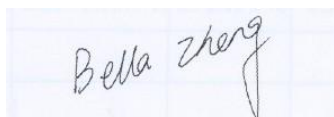
For 802.11g-Mid Channel (2437MHz):  
Power=15.19dBm, Antenna Gain=3dBi, Prediction distance 20cm  
 $S = (33.0 * 2.0) / (4 * 3.14 * 20 * 20) = 0.0131 \text{ mW/cm}^2$

For 802.11n/HT20- Mid Channel (2437MHz):  
Power=12.12dBm, Antenna Gain=3dBi, Prediction distance 20cm  
 $S = (16.2 * 2.0) / (4 * 3.14 * 20 * 20) = 0.0064 \text{ mW/cm}^2$

For 802.11n/HT40-Low Channel (2422MHz):  
Power=10.83dBm, Antenna Gain=3dBi, Prediction distance 20cm  
 $S = (12.1 * 2.0) / (4 * 3.14 * 20 * 20) = 0.0048 \text{ mW/cm}^2$

## Result

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



Completed By: \_\_\_\_\_

Date: 2012-06-08