SAR evaluation

FCC ID: 2BM3J-D517

MPE Calculation Method

$E\ (V/m) = (30*P*G)^{0.5}/d$

Power Density: $Pd\ (W/m2) = E^2/377$

E = Electric Field (V/m)

P = Peak RF output Power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

$Pd = (30*P*G) / (377*d^2)$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well

as the gain of the used antenna, the RF power density can be obtained.

Calculated WIFI Result and Limit (WORSE CASE IS AS BELOW)

Antenna Gain (Numeric)	Peak Output Power (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Test Result
4.54 dBi (2.844)	89.125 (19.5dBm)	0.0504	1	Compiles

Note:

Antenna Gain: 4.54dBi (2.4G Band)

Antenna Gain (Numeric): 2.844

ERP=19.5+4.54-2.15=21.89 dBm(154.53mW)

Calculated Image Transmission Result and Limit (WORSE CASE IS AS BELOW)

Antenna Gain (Numeric)	Peak Output Power (mW)	Power Density (S) (mW/cm2)	Limit of Power Density (S) (mW/cm2)	Test Result
5.14 dBi (3.266)	89.331 (19.51dBm)	0.0581	1	Compiles

Note:
Antenna Gain: 2.13dBi
Directional gain:5.14 dBi
Antenna Gain (Numeric):3.266

ERP=19.51+5.14-2.15=22.5dBm(177.83mW)

$$\sum_{i=1}^{a}\frac{P_i}{P_{th,i}}$$ =89.125/3060 +89.331/3060=0.05832

$$\sum_{j=1}^{b}\frac{ERP_j}{ERP_{th,j}}$$ =(154.53+177.83)/3060 =0.10861

$$\sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}$$ =（0.0504+0.0581）/1=0.1085

$$\sum_{i=1}^{a}\frac{P_i}{P_{th,i}}+\sum_{j=1}^{b}\frac{ERP_j}{ERP_{th,j}}+\sum_{k=1}^{c}\frac{Evaluated_k}{Exposure\ Limit_k}\le 1$$

0.05832+0.10861+0.1085=0.27543<1