SAR evaluation

FCC ID: 2BM3J-X50

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 Image	Transmissions	Result and Limit	WORSE CASE	IS AS BELOW)
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Antenna	Peak Output	Power Density	Limit of Power	Test
Gain	Power (mW)	(S) (mW/cm2)	Density (S)	Result
(Numeric)			(mW/cm2)	
4.95 dBi	159.96	0.0995	1	Compiles
(3.126)	(22.04dBm)			

Note:

Antenna Gain: 1.94dBi (2.4G Band) Assembly Antenna Gain: 4.95dBi

Assembly Antenna Gain (Numeric): 3.126

ERP=22.04+4.95-2.15=24.84dBm(304.79mW)

2.4G band and 5G band cannot transmit Simultaneously

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Antenna	Peak Output	Power Density	Limit of Power	Test
Gain	Power (mW)	(S) (mW/cm2)	Density (S)	Result
(Numeric)			(mW/cm2)	
4.76 dBi	55.72	0.0332	1	Compiles
(2.992)	(17.46dBm)			

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

Note:

Antenna Gain: 4.76dBi (2.4G Band)

Antenna Gain (Numeric): 2.992

ERP=17.46+4.760-2.15= 20.07dBm(101.625mW)





$$\sum_{k=1}^{c} \frac{Evaluated_k}{Exposure \ Limit_k} = (0.0995+0.0332) \ /1=0.1327$$

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

0.0705+0.133+0.1327=0.3362<1