FCC §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission's guidelines.

Report No.: 2401T46527E-RF-00B

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure									
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (minutes)					
0.3-1.34	614	1.63	*(100)	30					
1.34–30	824/f	2.19/f	*(180/f ²)	30					
30–300	27.5	0.073	0.2	30					
300–1500	/	/	f/1500	30					
1500-100,000	/	/	1.0	30					

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Result

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

 $S = PG/4\pi R^2 = power density (in appropriate units, e.g. mW/cm^2);$

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

For worst case:

Mode	Frequency (MHz)	Antenna Gain [#]		Max Tune-up Power [#]		Evaluation Distance	Power Density	MPE Limit
		(dBi)	(numeric)	(dBm)	(mW)	(cm)	(mW/cm ²)	(mW/cm^2)
BLE	2402-2480	2.42	1.75	7.0	5.01	20	0.0017	1.0
2.4G Wi-Fi	2412-2462	2.42	1.75	20.0	100.00	20	0.0348	1.0

Note:

- 1) The tune up conducted power and antenna gain was declared by the applicant.
- 2) The 2.4G Wi-Fi and BLE cannot transmit at same time.

To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

Result: Compliant.