FCC §15.247 (i), §2.1091 – RF Exposure

FCC ID: 2A73PDD-001

Applied procedures / limit
According to FCC §15.247(i) and §1.1307(b)(1), 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.

Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $|E|^2$,$|H|^2$or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

Note: f is frequency in MHz
* = Power density limit is applicable at frequencies greater than 100 MHz

Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $|E|^2$,$|H|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

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

MPE PREDICTION

Predication of MPE limit at a given distance, Equation from OET Bulletin 65, Edition 97-01

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

Where: S = power density
  P = power input to antenna
  G = power gain of the antenna in the direction of interest relative to an isotropic radiator
  R = distance to the center of radiation of the antenna,R=20cm

Test Result of RF Exposure Evaluation

	Tune up Produce power	Maximum peak output power (dBm)	Output power to antenna (mW)	Antenna Gain (numeric)	Power Density (S) (mW/cm2)	Limit (mW/cm2)	Result
2.4GWIFI 802.11b& 2437	17±1	18	63.0957	2.1281 (3.28dBi)	0.02673	1	Pass
LTE BAND 2	21±1	22	158.4893	2.3496 (3.71dBi)	0.07412	1	Pass
LTE BAND 4	23±1	24	251.1886	1.5276 (1.84dBi)	0.07638	1	Pass
LTE BAND 5	22±1	23	199.5262	1.8836 (2.75dBi)	0.07481	0.566	Pass
LTE BAND 7	23±1	24	251.1886	1.7022 (2.31dBi)	0.08511	1	Pass

S=0.02673/1+0.08511/1=0.11184≤1, So passed