FCC §15.247 (i) & §1.1307 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

According to subpart 15.247(i) and subpart §1.1307, 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.: RDG150320002-00A

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/f²)	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.

Calculated Formulary:

Predication of MPE limit at a given distance

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

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:

F	Frequency	Antenna Gain		Conducted Power		Evaluation Distance	Power Density	MPE Limit
	(MHz)	(dBi)	(numeric)	(dBm)	(mW)	(cm)	(mW/cm^2)	(mW/cm^2)
	2412	2	1.58	27.65	582.10	20.00	0.18	1.0

Result: The device meet FCC MPE at 20 cm distance

FCC Part 15.247 Page 8 of 43