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

Applicable Standard

According to 1.1310, 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for Maximum Permissible Exposure (MPE)

Limits for Occupational/Controlled Exposure									
Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm²)	Averaging Time E , H or S (minutes)					
0.3- 3.0	614	1.63	(100)*	6					
3.0 - 30	1842/f	4.89/f	(900/f ²)*	6					
30-300	61.4	0.163	1.0	6					
300-1500	/	/	f/300	6					
1500-100,000	/	/	5	6					

f = frequency in MHz;

* = Plane-wave equivalent power density;

MPE Calculation

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

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

Where: S = power density (in appropriate units, e.g. mW/cm²);

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

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

MPE Results

	Antenna Gain		Maximum	Operation		_	Power
Frequency (MHz)	(dBi)	(numeric)	Average output power including Tune-up Tolerance (mW)	Duty Cycle (%)	Evaluation Distance (cm)	Power Density (mW/cm ²)	Density Limit (mW/cm ²)
450-427	10	10	60000	50	200.00	0.6	1.5

Note: the maximum power including Tune-up Tolerance is 60 W.

Result: The device meet FCC MPE at 200 cm distance