5. RF EXPOSURE EVALUATION

5.1 FCC Maximum Permissible Exposure (MPE)

5.1.1 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.

5.1.2 Limits

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/cm^2)**	**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.

5.1.3 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);

5.1.4 Calculated Data

Mode	Frequency Band (MHz)	Maximum Tune-up Conducted Power (dBm)	Combined Loss (Antenna Gain-Cable Loss) (dB)	Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
Uplink	698-716	21	5.7	20	0.093	0.47
	776-787	20	5.7	20	0.074	0.52
	824-849	21	5.7	20	0.093	0.55
	1710-1755	21	5.8	20	0.095	1.00
	1850-1915	23	5.7	20	0.148	1.00
Downlink	728-746	7	6.2	20	0.004	0.49
	746-757	7	6.2	20	0.004	0.50
	869-894	6	6.2	20	0.003	0.58
	2110-2155	7	7.8	20	0.006	1.00
	1930-1995	7	8.7	20	0.007	1.00

Result: Compliant, The device meet MPE requirement at 20 cm distance.

=====END OF REPORT=====