4. RF exposure statement

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

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 [minute]
Limits for General Population/Uncontrolled Exposure				
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

4.1 Friis transmission formula

$$P_d = \frac{P_{out} \times G}{4\pi \times R^2}$$

P_d = Power density
P_{out} = power input to antenna
G = power gain
R = distance to the center of radiation of the antenna

$$R = \sqrt{\frac{P_{out} \times G}{4\pi \times P_d}}$$

4.2 Calculation of MPE

Frequency [MHz]	Output power [dBm]	Antenna gain [dBi]	Average power		Power density		Minimum safety distance [cm]
			[dBm]	[W]	[mW/cm^2]	[W/m^2]	
135.0	43.72	2.14	45.86	38.55	0.136	1.364	123.88
155.0	43.75	2.14	45.89	38.82	0.137	1.374	124.31
174.0	43.86	2.14	46.00	39.81	0.141	1.409	125.89

※ Calculated minimum separation distance from antenna : <u>150 cm</u>