4   FCC §2.1091 - RF Exposure Information

4.1   Applicable Standards

FCC §2.1091

(a) Requirements of this section are a consequence of Commission responsibilities under the National Environmental Policy Act to evaluate the environmental significance of its actions. See subpart I of part 1 of this chapter, in particular §1.1307(b).

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

Limits for Exposure

Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm^2)	Averaging Time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
1500-100,00	/	/	5.0	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	842/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

Note 1 to Table 1: Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

Note 2 to Table 1: General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can not exercise control over their exposure.

Antenna:

The manufacturer does not specify an antenna. A typical vehicle antenna has a gain of 3 dBi was used with this device. This device has provisions for operation in a vehicle, or a fixed location.

Operating Configuration and exposure conditions:

Device category: Mobile per Part 2.1091

Environment: Controlled Exposure

Typical use qualifies for a maximum duty cycle factor of 50%. The manufacturer also markets this device only for occupation use.

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

Maximum peak output power at antenna input terminal (dBm):	33.52
Maximum peak output power at antenna input terminal (mW):	2250
Maximum output power at antenna input terminal with 50% Duty Cycle (mW):	1125
Prediction distance (cm):	20
Prediction frequency (MHz):	160.1
Maximum Antenna Gain, typical (dBi):	3.0
Maximum Antenna Gain (numeric):	2.0
Power density of prediction frequency at 20 cm (mW/cm^2):	0.447
MPE limit for uncontrolled exposure at prediction frequency (mW/cm^2):	1.0

Conclusion

The device complies with the MPE requirements by providing a safe separation distance of 20 cm between the antenna, including any radiating structure, and any persons when normally operated.