

5 FCC §2.1091 - RF Exposure Information

5.1 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) |
|--|-------------------------------|-------------------------------|-------------------------------------|--------------------------|
| (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 | 30 |

f = frequency in MHz

** = Plane-wave equivalent power density*

5.2 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

| | |
|---|----------------|
| <u>Maximum peak output power at antenna input terminal (dBm):</u> | <u>29.85</u> |
| <u>Maximum peak output power at antenna input terminal (mW):</u> | <u>966.05</u> |
| <u>Prediction distance (cm):</u> | <u>20</u> |
| <u>Prediction frequency (MHz):</u> | <u>154.595</u> |
| <u>Maximum Antenna Gain, typical (dBi):</u> | <u>0</u> |
| <u>Maximum Antenna Gain (numeric):</u> | <u>1</u> |
| <u>Power density of prediction frequency at 20 cm (mW/cm²):</u> | <u>0.19</u> |
| <u>MPE limit for uncontrolled exposure at prediction frequency (mW/cm²):</u> | <u>0.2</u> |

5.3 Conclusion

The device complies with the MPE requirements by providing a safe separation distance of at least 20 cm between the antenna with maximum 0 dBi gain, including any radiating structure, and any persons when normally operated.