

## 1. Maximum Permissible Exposure (MPE)

### Standard Applicable

According to §1.1307(b)(1), systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

This is a Mobile device, the MPE is required.

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

Limits for Maximum Permissive Exposure (MPE)

| Frequency Range (MHz)                               | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm <sup>2</sup> ) | 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 <sup>2</sup> )              | 30                      |
| 30-300  | 27.5                          | 0.073                         | 0.2                                 | 30                      |
| 300-1500  | /                             | /                             | F/1500                              | 30                      |
| 1500-15000  | /                             | /                             | 1.0                                 | 30                      |

F = frequency in MHz

\* = Plane-wave equipment power density

The MPE was calculated at 20 cm to show compliance with the power density limit

The following formula was used to calculate the Power Density.

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

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 Permissible Exposure (MPE) Evaluation

| Frequency Band (MHz) | Conducted power (dBm) | Antenna gain (dBi) | Tune-Up Tolerance (dB) | EIRP (dBm) | MPE (mW/cm <sup>2</sup> ) | LIMIT (mW/cm <sup>2</sup> ) |
|----------------------|-----------------------|--------------------|------------------------|------------|---------------------------|-----------------------------|
| 902 - 928            | 20.13                 | 4.50               | 1                      | 25.630     | 0.07274                   | 1                           |
| 902 - 928            | 20.13                 | 1.32               | 1                      | 22.450     | 0.03498                   | 1                           |
| 902 - 928            | 20.13                 | 0.58               | 1                      | 21.710     | 0.02950                   | 1                           |

~ End of Report ~