

## 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<br>(MHz)                            | Electric Field<br>Strength (V/m) | Magnetic Field<br>Strength (A/m) | Power Density<br>(mW/cm <sup>2</sup> ) | Averaging Time<br>(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<br>(MHz) | Conducted<br>power (dBm) | Antenna gain<br>(dBi) | Tune-Up<br>Tolerance<br>(dB) | EIRP<br>(dBm) | MPE<br>(mW/cm <sup>2</sup> ) | LIMIT<br>(mW/cm <sup>2</sup> ) |
|-------------------------|--------------------------|-----------------------|------------------------------|---------------|------------------------------|--------------------------------|
| 2412 - 2462             | 22.37                    | -0.8                  | 1                            | 22.570        | 0.03595259                   | 1                              |
| 5150 - 5250             | 14.48                    | 1.76                  | 1                            | 17.240        | 0.01053732                   | 1                              |
| 5725 - 5850             | 14.48                    | 1.76                  | 1                            | 17.240        | 0.01053732                   | 1                              |

~ End of Report ~