

## 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

|    |
|----|
| 20 |
|----|

cm

| Frequency band | Conducted power (dBm) | Antenna gain (dBi) | Tune-Up Tolerance (dB) | EIRP (dBm) | MPE (W/m <sup>2</sup> ) | LIMIT (W/m <sup>2</sup> ) |
|----------------|-----------------------|--------------------|------------------------|------------|-------------------------|---------------------------|
| 2402-2480      | 5.68                  | 1.5                | 1                      | 8.180      | 0.001                   | 1                         |
| 2402-2480      | 5.70                  | 1.5                | 1                      | 8.200      | 0.001                   | 1                         |
| 2412-2462      | 22.90                 | 1.5                | 1                      | 25.400     | 0.069                   | 1                         |
| 5180-5240      | 10.30                 | 3.5                | 1                      | 14.800     | 0.006                   | 1                         |
| 5260-5320      | 10.44                 | 3.5                | 1                      | 14.960     | 0.006                   | 1                         |
| 5500-5700      | 10.17                 | 3.5                | 1                      | 14.670     | 0.006                   | 1                         |
| 5745-5825      | 9.61                  | 3.5                | 1                      | 10.610     | 0.005                   | 1                         |

Note:

1. For conservativeness, the lowest uplink frequency of each band is used to determine the MPE limit of that band.
2. In the table above, which considers maximum directional Gain is 1.5dBi for 2.4GHz band and 3.5 dBi for 5GHz band

~ End of Report ~