

FCC § 1.1307(b)(1) & § 2.1091-RF EXPOSURE

**1. Applicable Standard**

According to § 11310 and § 2.1091 (Mobile Devices)RF exposure is calculated.

| Frequency Range(Mhz)                                | Electric Field Stength(V/m) | Magnetic Field Stength(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                      |
| 1500-100,000  | /                           | /                           | 1.0                                 | 30                      |

f=frequency in MHz

\*=Plane-wave equivalent power density

**2.Prediction of MPE limit at given distance, equations from OET Bulletin 65, Edition 97-01:**

$$S = (1.64 * P * G) / (4 * \pi * R^2) \quad (\text{where PG} = \text{ERP})$$

$$S = (P * G) / (4 * \pi * R^2) \quad (\text{where PG} = \text{EIRP})$$

Where:

S = power density

P= power input to antenna

G= numeric gain of the antenna

R= distance to the center of radiation of the antenna

**700MHz Band:**

|  |      |
|--|------|
| Maximum peak output power at antenna input terminal (dBm):                           | 18   |
| Maximum peak output power at antenna input terminal (mW):                            | 63.1 |
| Prediction distance (cm):  | 40   |
| Prediction frequency (MHz):  | 752  |
| Maximum antenna gain (dBd):  | 13.6 |
| Maximum antenna gain (numeric):  | 22.9 |
| Maximum RF output power (ERP, mW):   | 1450 |
| Power density at predication frequency and distance (mW/cm <sup>2</sup> ):           | 0.12 |
| MPE limit for uncontrolled exposure at predication frequency (mW/ cm <sup>2</sup> ): | 0.50 |

**850MHz Band:**

|  |       |
|--|-------|
| Maximum peak output power at antenna input terminal (dBm):                           | 26    |
| Maximum peak output power at antenna input terminal (mW):                            | 398.1 |
| Prediction distance (cm):  | 40    |
| Prediction frequency (MHz):  | 881.6 |
| Maximum antenna gain (dBd):  | 5.6   |
| Maximum antenna gain (numeric):  | 3.63  |
| Maximum RF output power (ERP, mW):   | 1450  |
| Power density at predication frequency and distance (mW/cm <sup>2</sup> ):           | 0.12  |
| MPE limit for uncontrolled exposure at predication frequency (mW/ cm <sup>2</sup> ): | 0.59  |

**1900MHz**

|  |        |
|--|--------|
| Maximum peak output power at antenna input terminal (dBm):                           | 26     |
| Maximum peak output power at antenna input terminal (mW):                            | 398.1  |
| Prediction distance (cm):  | 40     |
| Prediction frequency (MHz):  | 1962.6 |
| Maximum antenna gain (dBi):  | 7.75   |
| Maximum antenna gain (numeric):  | 5.96   |
| Maximum RF output power (EIRP, mW):  | 2372   |
| Power density at predication frequency and distance (mW/cm <sup>2</sup> ):           | 0.12   |
| MPE limit for uncontrolled exposure at predication frequency (mW/ cm <sup>2</sup> ): | 1      |

According to the following formula:

850 MPE value / 850 MPE limit + 1900 MPE value / 1900 MPE limit + 700 MPE value / 700 MPE limit < = 1, get

$$0.12/0.59+0.12/1+0.12/0.50=0.58$$

**3. Test Results**

The device is compliant with the requirement MPE limit for uncontrolled exposure.