# FCC §15.247 (i) & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

## **Applicable Standard**

According to subpart 15.247 (i) and subpart 2.1091 systems operating under the provisions of this section shall be operated in a manner that ensures the public is not exposed to RF energy level in excess of the communication guidelines.

Limits for General Population/Uncontrolled Exposure

Report No.: RSZ200706003-00BA1

| Limits for General Population/Uncontrolled Exposure |               |        |                        |                                |  |  |  |  |  |
|---|---------------|--------|------------------------|--------------------------------|--|--|--|--|--|
| Frequency<br>Range<br>(MHz)                         | ge Strength S |        | Power Density (mW/cm²) | Averaging<br>Time<br>(Minutes) |  |  |  |  |  |
| 0.3-1.34  | 614           | 1.63   | *(100)                 | 30                             |  |  |  |  |  |
| 1.34-30   | 824/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  | /             | /      | 1.0                    | 30                             |  |  |  |  |  |

f = frequency in MHz

#### Result

#### **Calculated Formulary:**

Predication of MPE limit at a given distance

$$S = \frac{PG}{4\pi R^2}$$

S = power density (in appropriate units, e.g. mW/cm2)

P = power input to the antenna (in appropriate units, e.g., mW).

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain.

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm)

| Frequency | Antenna Gain |           | Maximum Tune Up<br>Conducted Power |      | Evaluation<br>Distance | Power<br>Density | MPE Limit             |
|-----------|--------------|-----------|------------------------------------|------|------------------------|------------------|-----------------------|
| (MHz)     | (dBi)        | (numeric) | (dBm)                              | (mW) | (cm)                   | $(mW/cm^2)$      | (mW/cm <sup>2</sup> ) |
| 2402-2480 | 2.54         | 1.79      | 10                                 | 10   | 20                     | 0.0036           | 1.0                   |

Note: To maintain compliance with the FCC's RF exposure guidelines, place the equipment at least 20cm from nearby persons.

### Result: compliance.

FCC Part 15.247 Page 9 of 23

<sup>\* =</sup> Plane-wave equivalent power density