

**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**

| <b>Limits for General Population/Uncontrolled Exposure</b> |                                      |                                      |                                          |                                 |
|------------------------------------------------------------|--------------------------------------|--------------------------------------|------------------------------------------|---------------------------------|
| <b>Frequency Range (MHz)</b>                               | <b>Electric Field Strength (V/m)</b> | <b>Magnetic Field Strength (A/m)</b> | <b>Power Density (mW/cm<sup>2</sup>)</b> | <b>Averaging Time (Minutes)</b> |
| 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

**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/cm<sup>2</sup>)

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)

| <b>Frequency (MHz)</b> | <b>Antenna Gain</b> |                  | <b>Tune up conducted power</b> |             | <b>Evaluation Distance (cm)</b> | <b>Power Density (mW/cm<sup>2</sup>)</b> | <b>MPE Limit (mW/cm<sup>2</sup>)</b> |
|------------------------|---------------------|------------------|--------------------------------|-------------|---------------------------------|------------------------------------------|--------------------------------------|
|                        | <b>(dBi)</b>        | <b>(numeric)</b> | <b>(dBm)</b>                   | <b>(mW)</b> |                                 |                                          |                                      |
| 2412-2462              | 2.5                 | 1.78             | 19.0                           | 79.43       | 20                              | 0.028                                    | 1.0                                  |

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

**Result: Compliance**