



### MPE Calculation for FCC Uncontrolled Environment

Formula from page 18 of OET Bulletin 65, Edition 97-01

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

where: S = power density

P = power input to the 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

Source Based Time Averaged Duty Cycle is 100% in calculation below

|                                                              |               |           |
|--------------------------------------------------------------|---------------|-----------|
| Maximum peak output power at antenna input terminal:         | <u>5.10</u>   | (dBm)     |
| Maximum peak output power at antenna input terminal:         | <u>0.003</u>  | (W)       |
| Maximum antenna gain:                                        | <u>4.80</u>   | (dBi)     |
| Maximum antenna gain:                                        | <u>3.020</u>  | (numeric) |
| Prediction distance:                                         | <u>20</u>     | (cm)      |
| Prediction frequency:                                        | <u>2440</u>   | (MHz)     |
| Time Averaged Duty Cycle                                     | <u>100</u>    | %         |
| MPE limit for uncontrolled exposure at prediction frequency: | <u>10.00</u>  | (W/m^2)   |
| Power density at prediction frequency:                       | <u>0.0019</u> | (mW/cm^2) |
| Power density at prediction frequency:                       | <u>0.019</u>  | (W/m^2)   |
| Maximum allowable antenna gain:                              | <u>31.91</u>  | (dBi)     |
| Margin of Compliance:                                        | <u>27.11</u>  | (dB)      |

| <u>Frequency(MHz)</u> | <u>Limit(mW/cm^2)</u> |
|-----------------------|-----------------------|
| 0.3                   | 100                   |
| 1.34                  | 100                   |
| 1.341                 | 3.02338E-05           |
| 29.9                  | 3.02338E-05           |
| 30                    | 0.2                   |
| 299.999               | 0.2                   |
| 300                   | 0.2                   |
| 350                   | 0.233333333           |
| 375                   | 0.25                  |
| 400                   | 0.266666667           |
| 450                   | 0.3                   |
| 460                   | 0.306666667           |
| 475                   | 0.316666667           |
| 500                   | 0.333333333           |
| 525                   | 0.35                  |
| 540                   | 0.36                  |
| 550                   | 0.366666667           |
| 600                   | 0.4                   |
| 625                   | 0.416666667           |
| 650                   | 0.433333333           |
| 700                   | 0.466666667           |
| 800                   | 0.533333333           |
| 900                   | 0.6                   |
| 1000                  | 0.666666667           |
| 1100                  | 0.733333333           |
| 1200                  | 0.8                   |
| 1300                  | 0.866666667           |
| 1400                  | 0.933333333           |
| 1500                  | 1                     |
| 100000                | 1                     |