

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines. See § 1.1307(b)(1) of this Chapter.

### Limit

Limits for general population/Uncontrolled exposure

| Frequency Range [MHz] | Electric Field Strength (E) [V/m] | Magnetic Field Strength (H) [A/m] | Power Density (S) [mW/cm <sup>2</sup> ] | Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S [minutes] |
|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------------|-------------------------------------------------------------------|
| 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 - 1 500           | --                                | --                                | f/1 500                                 | 30                                                                |
| 1 500 - 100 000       | --                                | --                                | 1.0                                     | 30                                                                |

f = frequency in MHz

\*Plane-wave equivalent power density

### MPE Prediction

Predication of MPE limit at a given distance.

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

$$S = PG/4\pi R^2$$

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

|                                                 |                               |
|-------------------------------------------------|-------------------------------|
| Maximum peak output power at antenna input      | : 9.05 dBm (8.03 mW)          |
| Prediction distance                             | : 20 cm                       |
| Predication frequency                           | : 2 472 MHz                   |
| Antenna gain(Max)                               | : 3.50 dBi (2.24 numeric)     |
| Power density at predication frequency at 20 cm | : 0.003579 mW/cm <sup>2</sup> |
| MPE Limit for                                   | : 1 mW/cm <sup>2</sup>        |

### Test Result

The power density level at 20 cm is 0.003579 mW/cm<sup>2</sup> which is below the uncontrolled exposure limit of 1 mW/cm<sup>2</sup> at 2 412 MHz to 2 472 MHz.