

## RF EXPOSURE

According to §1.1307(b)(1), 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 level in excess of the Commission's guidelines.

According to §1.1310 and §2.1093 RF exposure is calculated.

Limits for Maximum Permissible Exposure (MPE)

### (A) Limits for General Population/Uncontrolled Exposure

| Frequency Range (MHz)                               | Electric Field Strength (V/m) | Magnetic Field Strength (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                      |

### (B) Limits for Occupational/Controlled Exposures

| Frequency Range (MHz)                       | Electric Field Strength (V/m) | Magnetic Field Strength (A/m) | Power Density (mW/cm <sup>2</sup> ) | Averaging Time (minute) |
|---|-------------------------------|-------------------------------|-------------------------------------|-------------------------|
| Limits for Occupational/Controlled Exposure |                               |                               |                                     |                         |
| 0.3-3.0                                     | 614                           | 1.63                          | *(100)                              | 6                       |
| 3.0-30                                      | 1842/f                        | 4.89/f                        | *(900/f <sup>2</sup> )              | 6                       |
| 30-300                                      | 61.4                          | 0.163                         | 1.0                                 | 6                       |
| 300-1500                                    | /                             | /                             | f/300                               | 6                       |
| 1500-100,000                                | /                             | /                             | 5                                   | 6                       |

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

P = power input to 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

*RF Exposure for 15.407*

Maximum peak output power at antenna input terminal: 17.25 (dBm)

Maximum peak output power at antenna input terminal: 53.09 (mW)

Predication frequency: 5280 (MHz)

Antenna Gain (maximum): 33.4 (dBi)

antenna gain: 2187.76 (numeric)

Prediction distance: 96.14 (cm)

*RF Exposure for 15.247*

Maximum peak output power at antenna input terminal: 20.87 (dBm)

Maximum peak output power at antenna input terminal: 122.18 (mW)

Predication frequency: 5800 (MHz)

Antenna Gain (maximum): 33.4 (dBi)

antenna gain: 2187.76 (numeric)

Prediction distance: 145.85 (cm)

**Test Result**

The EUT is of fixed outdoor installation, point -to-point or point-to-multipoint. 1mW/cm2 limit applies.