

## Prediction of MPE at a given distance

### 1. Limits

The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in 1.1307(b)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
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
(B) 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

### 2. Test Procedure

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

$$S = \frac{P \times G}{4 \times \pi \times R^2}$$

Where:

S = power density

P = power input to the antenna

G = numeric gain of the antenna in the direction of interest relative to an isotropic radiator

R = distance to the centre of radiation of the antenna

## 3. Result

Channel	Maximum Output power (dBm)	Maximum Output power (mW)	Antenna Gain (dBi)	Antenna Gain (numeric)	Distance (cm)	Result (mW/cm <sup>2</sup> )	Limits for General Population/ Uncontrolled Exposure (mW/cm <sup>2</sup> )
802.11b							
Lowest	18.78	75.51	-1	0.79	20	0.012	1.00
Middle	18.94	78.34	-1	0.79	20	0.123	1.00
Highest	18.91	77.80	-1	0.79	20	0.122	1.00
802.11g							
Lowest	15.64	36.64	-1	0.79	20	0.006	1.00
Middle	17.07	50.93	-1	0.79	20	0.008	1.00
Highest	16.15	41.21	-1	0.79	20	0.006	1.00
802.11n(20)							
Lowest	15.83	38.28	-1	0.79	20	0.006	1.00
Middle	16.99	50.00	-1	0.79	20	0.009	1.00
Highest	16.07	40.46	-1	0.79	20	0.006	1.00
802.11n(40)							
Lowest	17.05	50.70	-1	0.79	20	0.008	1.00
Middle	14.99	31.55	-1	0.79	20	0.005	1.00
Highest	15.48	35.32	-1	0.79	20	0.006	1.00