

MPE Calculation page

MPE Calculator Test Number: 071109

MPE uses EIRP for calculation. EIRP is based on TX power added to the antenna gain in dBi.

dBi = dB gain compared to an isotropic radiator.

S = power density in mW/cm²

Antenna Gain (dBi) 1
 dBi to dBd 2.17
 Output Power dBd + 2.17 = dBi
 (Watts) 0.000414
 Tx Frequency (MHz) 2440
 Antenna minus cable (dBi) 1.00
 Cable Loss (dB) 0.0 (dBm) -3.83

Calculated ERP (mw) 0.316 Radiated (EIRP) dBm -2.830

Calculated EIRP (mw) 0.521 Radiated (ERP) dBm -5.000

Occupational Limit
5.00000 mW/cm²

General Public Limit
1.00000 mW/cm²

Power density (S) =
 EIRP
 ----- (mW/cm²)
 4 π r²
 [r (cm), EIRP (mW)]

FCC radio frequency radiation exposure limits per 1.1310		
Frequency (MHz)	Occupational Limit	Public Limit
300-1,500	f/300	f/1500
1,500-10,000	5	1

FCC radio frequency radiation exposure limits per 1.1310		
Frequency (MHz)	Occupational Limit @ Tx Freq (mW/cm ²)	Public Limit @ Tx Freq (mW/cm ²)
300-1,500	8.133333333	1.626666667
1,500-10,000	5	1

EIRP	Distance	Distance	S
milliwatts	cm	inches	mW/cm ²
0.521	50.00	19.69	0.00002
0.521	40.00	15.75	0.00003
0.521	30.00	11.81	0.00005
0.521	25.00	9.84	0.00007
0.521	20.00	7.87	0.00010
0.521	15.00	5.91	0.00018
0.521	14.00	5.51	0.00021
0.521	13.00	5.12	0.00025
0.521	12.00	4.72	0.00029
0.521	11.00	4.33	0.00034
0.521	10.00	3.94	0.00041
0.521	9.00	3.54	0.00051
0.521	8.00	3.15	0.00065
0.521	7.00	2.76	0.00085
0.521	6.00	2.36	0.00115
0.521	5.00	1.97	0.00166
0.521	4.00	1.57	0.00259
0.521	3.00	1.18	0.00461
0.521	2.00	0.79	0.01037
0.521	1.00	0.39	0.04148
0.521	0.50	0.20	0.16590
0.521	0.40	0.16	0.25922
0.521	0.35	0.14	0.33857
0.521	0.25	0.10	0.66361
0.521	0.20	0.08	1.03688

Frequency (MHz)	Occupational Limit minimum Distance (cm)	Public Limit minimum distance (cm)
300-1,500	N/A	N/A
1,500-10,000	N/A	0.20