MPE Calculator

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/cm^2

dBd + 2.17 = dBi

				Antenna Gain (dBi)	1
		Output Power		dBi to dBd	2.17
Tx Frequency (MHz)	915	(Watts)	0.000521		-1.17
				Antenna minus cable (dBi)	1.00
Cable Loss (dB)	0.0	(dBm)	-2.83		
	Calculated ERP (mw)	0.398		Radiated (EIRP) dBm	-1.829
	Calculated EIRP (mw)	0.656			
				Radiated (ERP) dBm	-3.999

	Occupational Limit
3.05000	**mW/cm^2**
	General Public Limit
0.61000	**mW/cm^2**

Power density (S)

EIRP
------- = mW/cm^2
4 p r^2

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
1,500-100,000	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	3.05	0.61
1,500-100,000	5	1

EIRP	Distance	Distance	S
milliwatts	cm	inches	mW/cm^2
0.656	50.00	19.69	0.00002
0.656	40.00	15.75	0.00003
0.656	30.00	11.81	0.00006
0.656	20.00	7.87	0.00013
0.656	10.00	3.94	0.00052
0.656	5.00	1.97	0.00209
0.656	4.00	1.57	0.00326
0.656	3.00	1.18	0.00580
0.656	2.00	0.79	0.01306
0.656	1.00	0.39	0.05223
0.656	0.50	0.20	0.20892
0.656	0.30	0.12	0.58032
0.656	0.20	0.08	1.30572
0.656	0.15	0.06	2.32129
0.656	0.13	0.05	3.09047

Frequency (MHz)	Occupational Limit minimum Distance (cm / in)	Public Limit minimum distance (cm / in)
300-1,500	0.13 / 0.05	0.30 / 0.12
1,500-10,000	N/A	N/A