MPE Calculation page

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					
Transmitter maximum Output power operating at 100% (Watts)			12.7644		Antenna Gain (dBi)	1
Output Power for 50% duty Cycle operation (Watts)			6.3822	dBd + 2.17 = dBi	dBi to dBd	2.2
Tx Frequency (MHz)	127	Calcualtion power (Watts)	6.3822		Antenna Gain (dBd)	-1.17
Cable Loss (dB)	0.0	(dBm)	38.05		Antenna minus cable (dBi)	1.00
Calculated ERP (mw)	4874.948				EIRP = Po(dBM) + Gain (dB)	
Calculated EIRP (mw)	8034.706				Radiated (EIRP) dBm	39.050
					ERP = EIRP - 2.17 dB	
Occupational Limit					Radiated (ERP) dBm	36.880
1.00000	mW/cm^2					
10.00000	W/m^2					
General Public Limit						
0.20000	mW/cm^2					
2.00000	W/m^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
30-300 (mW/cm^2)	1	0.2
300-1,500 (mW/cm^2)	f/300	f/1500
1,500-10,000 (mW/cm^2)	5	1

FCC radio frequency radiation exposure limits per 1.1310		
Frequency (MHz)	Occupational Limit @ Tx Freq	Public Limit @ Tx Freq
30-300 (mW/cm2)	1	0.2
30-300 (W/m2)	10	2
300-1,500 (mW/cm2)	0.423333333	0.084666667
300-1,500 (W/m2)	4.233333333	0.846666667
1,500-10,000 (mW/cm2)	5	1
1,500-10,000 (W/m2)	50	10

EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm^2	W/m^2	cm	meter	inches	Feet
8034.706	0.01598	0.15985	200.00	2.00	78.74	0.17
8034.706	0.01771	0.17711	190.00	1.90	74.80	0.16
8034.706	0.01973	0.19734	180.00	1.80	70.87	0.15
8034.706	0.02212	0.22124	170.00	1.70	66.93	0.14
8034.706	0.02498	0.24976	160.00	1.60	62.99	0.13
8034.706	0.02842	0.28417	150.00	1.50	59.06	0.13
8034.706	0.03262	0.32622	140.00	1.40	55.12	0.12
8034.706	0.04092	0.40920	125.00	1.25	49.21	0.10
8034.706	0.06394	0.63938	100.00	1.00	39.37	0.08
8034.706	0.25575	2.55753	50.00	0.50	19.69	0.04
8034.706	0.33026	3.30259	44.00	0.44	17.32	0.04
8034.706	0.39961	3.99614	40.00	0.40	15.75	0.03
8034.706	0.71042	7.10424	30.00	0.30	11.81	0.03
8034.706	1.02301	10.23011	25.00	0.25	9.84	0.02
8034.706	1.59845	15.98454	20.00	0.20	7.87	0.02
8034.706	6.39382	63.93816	10.00	0.10	3.94	0.01
8034.706	25.57526	255.75264	5.00	0.05	1.97	0.00

Frequency (MHz)	Occupational Limit minimum Distance (meters)	Occupational Limit minimum Distance (cm / inches)	Public Limit minimum distance (meters)	Public Limit minimum distance (cm / inches)
30-300	0.25	25 / 9.8	N/A	N/A
300-1,500	N/A	N/A	N/A	N/A
1,500-10,000	N/A	N/A	N/A	N/A