MPE Calculator	Research and Development Corp	Test 081110		
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		Antenna Gain (dBi)	1
			dBd + 2.17 = dBi	
		Output Power	dBi to dBd	2.17
Tx Frequency (MHz)	418	(Watts) 0.000161		-1.17
		(dBm) -7.93		
Cable Loss (dB)	0.0		Antenna minus cable (dBi)	1.00

Calculated ERP (mw)	0.123	Radiated (ERP) dBm	-9.099
Calculated EIRP (mw)	0.203	Radiated (EIRP) dBm	-6.929

Occupational Limit
1.39333 mW/cm^2

General Public Limit
0.27867 mW/cm^2

Power density (S)
$$\frac{EIRP}{4\pi r^2} = \text{mW/cm}^2$$
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
1,500-10,000	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	1.393333333	0.278666667
1,500-10,000	5	1

EIRP milliwatts	Distance cm	Distance inches	S mW/cm^2
0.203	50.00	19.69	0.00001
0.203	25.00	9.84	0.00003
0.203	20.00	7.87	0.00004
0.203	15.00	5.91	0.00007
0.203	10.00	3.94	0.00016
0.203	9.00	3.54	0.00020
0.203	8.00	3.15	0.00025
0.203	7.00	2.76	0.00033
0.203	6.00	2.36	0.00045
0.203	5.00	1.97	0.00065
0.203	4.00	1.57	0.00101
0.203	3.00	1.18	0.00179
0.203	2.00	0.79	0.00404
0.203	1.00	0.39	0.01614
0.203	0.90	0.35	0.01993
0.203	0.75	0.30	0.02869
0.203	0.50	0.20	0.06456
0.203	0.25	0.10	0.25824
0.203	0.24	0.09	0.28021

Frequency (MHz)	Occupational Limit minimum Distance (cm)	Public Limit minimum distance (cm)
300-1,500	N/A	0.24
1,500-10,000	N/A	N/A