

MPE Calculation page

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 19 Watts operating at 100%				
Power output operation for 50% duty Cycle 9.5 Watts			Antenna Gain (dBi)	2
Output Power dBd + 2.17 = dBi			dBi to dBd	2.17
Tx Frequency (MHz)	127.5	(Watts)	9.500000	-0.17
			Antenna minus cable (dBi)	2.00
Cable Loss (dB)	0.0	(dBm)	39.78	
Calculated ERP (mw) 9135.317			Radiated (EIRP) dBm	41.777
Calculated EIRP (mw) 15056.485				
			Radiated (ERP) dBm	39.607
Occupational Limit		<div>Power density (S) = EIRP ----- = mW/cm^2 4 p r^2 [r (cm), EIRP (mW)]</div>		
1.00000	mW/cm^2			
General Public Limit				
0.20000	mW/cm^2			
FCC radio frequency radiation exposure limits per 1.1310				
Frequency (MHz)		Occupational Limit	Public Limit	
30-300		1	0.2	
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		1	0.2	
300-1,500		0.425	0.085	
1,500-100,000		5	1	
EIRP		Distance	Distance	S
milliwatts		cm	inches	mW/cm^2
15056.485		200.00	78.74	0.02995
15056.485		150.00	59.06	0.05325
15056.485		125.00	49.21	0.07668
15056.485		100.00	39.37	0.11982
15056.485		90.00	35.43	0.14792
15056.485		80.00	31.50	0.18721
15056.485		76.00	29.92	0.20744
15056.485		75.00	29.53	0.21301
15056.485		70.00	27.56	0.24452
15056.485		65.00	25.59	0.28359
15056.485		50.00	19.69	0.47926
15056.485		40.00	15.75	0.74885
15056.485		34.00	13.39	1.03647
15056.485		30.00	11.81	1.33129
15056.485		25.00	9.84	1.91705
Frequency (MHz)		Occupational Limit minimum Distance (cm / in)	Public Limit minimum distance (cm / in)	
300-1,500		N/A	N/A	
1,500-10,000		34 cm / 13.4"	76 cm / 29.9"	