

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					
				Antenna Gain (dBi)	1.7	
		Output Power		dBd + 2.17 = dBi	dBi to dBd 2.2	
Tx Frequency (MHz)	2437	Maximum (Watts)	0.090500	Antenna Gain (dBd)	-0.47	
Cable Loss (dB)	0.0	(dBm)	19.57	Antenna minus cable (dBi)	1.70	
	Calculated ERP (mw)	81.217		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	133.859		Radiated (EIRP) dBm	21.266	
				ERP = EIRP - 2.17 dB		
	Occupational Limit			Radiated (ERP) dBm	19.096	
	5.00000 mW/cm ²	<div style="border: 1px solid black; padding: 5px;"> Power density (S) EIRP ----- = mW/cm² 4 p r² r (cm) EIRP (mW) </div>				
	50.00000 W/m ²					
	General Public Limit					
	1.00000 mW/cm ²					
	10.00000 W/m ²					
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	Public Limit @ Tx Freq (mW/cm ²)			
	300-1,500 (mW/cm2)	8.123333333	1.624666667			
	300-1,500 (W/m2)	81.233333333	16.24666667			
	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
133.859	0.00107	0.01065	100.00	1.00	39.37	0.08
133.859	0.00132	0.01315	90.00	0.90	35.43	0.08
133.859	0.00166	0.01664	80.00	0.80	31.50	0.07
133.859	0.00217	0.02174	70.00	0.70	27.56	0.06
133.859	0.00296	0.02959	60.00	0.60	23.62	0.05
133.859	0.00426	0.04261	50.00	0.50	19.69	0.04
133.859	0.00666	0.06658	40.00	0.40	15.75	0.03
133.859	0.01184	0.11836	30.00	0.30	11.81	0.03
133.859	0.01704	0.17043	25.00	0.25	9.84	0.02
133.859	0.02663	0.26630	20.00	0.20	7.87	0.02
133.859	0.04734	0.47343	15.00	0.150	5.91	0.013
133.859	0.10652	1.06522	10.00	0.100	3.94	0.008
133.859	0.16644	1.66440	8.00	0.080	3.15	0.007
133.859	0.42609	4.26087	5.00	0.050	1.97	0.004
133.859	0.66576	6.65762	4.00	0.040	1.57	0.003
133.859	0.97816	9.78162	3.30	0.033	1.30	0.003
133.859	1.18358	11.83576	3.00	0.030	1.18	0.003
			Occupational Limit minimum Distance (meters)	Occupational Limit minimum Distance (cm / inches)	Public Limit minimum distance (meters)	Public Limit minimum distance (cm / inches)
		Frequency (MHz)				
		300-1,500	N/A	N/A	N/A	N/A
		1,500-10,000	N/A	N/A	0.03	3.3 / 1.3