

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)	0.094000	Antenna Gain (dBd)	-0.47	
Cable Loss (dB)	0.0	(dBm)	19.73	Antenna minus cable (dBi)	1.70	
	Calculated ERP (mw)	84.358		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	139.036		Radiated (EIRP) dBm	21.431	
				ERP = EIRP - 2.17 dB		
	Occupational Limit			Radiated (ERP) dBm	19.261	
	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
139.036	0.00111	0.01106	100.00	1.00	39.37	0.08
139.036	0.00137	0.01366	90.00	0.90	35.43	0.08
139.036	0.00173	0.01729	80.00	0.80	31.50	0.07
139.036	0.00226	0.02258	70.00	0.70	27.56	0.06
139.036	0.00307	0.03073	60.00	0.60	23.62	0.05
139.036	0.00443	0.04426	50.00	0.50	19.69	0.04
139.036	0.00692	0.06915	40.00	0.40	15.75	0.03
139.036	0.01229	0.12293	30.00	0.30	11.81	0.03
139.036	0.01770	0.17703	25.00	0.25	9.84	0.02
139.036	0.02766	0.27660	20.00	0.20	7.87	0.02
139.036	0.04917	0.49174	15.00	0.150	5.91	0.013
139.036	0.11064	1.10641	10.00	0.100	3.94	0.008
139.036	0.17288	1.72877	8.00	0.080	3.15	0.007
139.036	0.22580	2.25799	7.00	0.070	2.76	0.006
139.036	0.44257	4.42566	5.00	0.050	1.97	0.004
139.036	0.69151	6.91509	4.00	0.040	1.57	0.003
139.036	1.22935	12.29350	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	0.04	4 / 1.6