

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)	1.8	
		Output Power		dBd + 2.17 = dBi	dBi to dBd 2.2	
Tx Frequency (MHz)	915	Maximum (Watts)	0.010000	Antenna Gain (dBd)	-0.37	
Cable Loss (dB)	0.0	(dBm)	10.00	Antenna minus cable (dBi)	1.80	
	Calculated ERP (mw)	9.183		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	15.136		Radiated (EIRP) dBm	11.800	
				ERP = EIRP - 2.17 dB		
	Occupational Limit			Radiated (ERP) dBm	9.630	
	3.05000 mW/cm ²	<div style="border: 1px solid black; padding: 5px;"> Power density (S) EIRP ----- = mW/cm² $4 \pi r^2$ r (cm) EIRP (mW) </div>				
	30.50000 W/m ²					
	General Public Limit					
	0.61000 mW/cm ²					
	6.10000 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/cm ²)	3.05	0.61			
	300-1,500 (W/m ²)	30.5	6.1			
	1,500-10,000 (mW/cm ²)	5	1			
	1,500-10,000 (W/m ²)	50	10			
EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm ²	W/m ²	cm	meter	inches	Feet
15.136	0.00012	0.00120	100.00	1.00	39.37	0.08
15.136	0.00015	0.00149	90.00	0.90	35.43	0.08
15.136	0.00019	0.00188	80.00	0.80	31.50	0.07
15.136	0.00025	0.00246	70.00	0.70	27.56	0.06
15.136	0.00033	0.00335	60.00	0.60	23.62	0.05
15.136	0.00048	0.00482	50.00	0.50	19.69	0.04
15.136	0.00193	0.01927	25.00	0.25	9.84	0.02
15.136	0.00010	0.00101	109.00	1.09	42.91	0.09
15.136	0.01882	0.18820	8.00	0.08	3.15	0.01
15.136	0.02458	0.24581	7.00	0.07	2.76	0.01
15.136	0.03346	0.33457	6.00	0.060	2.36	0.005
15.136	0.04818	0.48178	5.00	0.050	1.97	0.004
15.136	0.07528	0.75278	4.00	0.040	1.57	0.003
15.136	0.13383	1.33828	3.00	0.030	1.18	0.003
15.136	0.30111	3.01113	2.00	0.020	0.79	0.002
15.136	0.53531	5.35313	1.50	0.015	0.59	0.001
15.136	1.20445	12.04454	1.00	0.010	0.39	0.001
			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	0.015	1.5 / 0.6
		1,500-10,000	N/A	N/A	N/A	N/A