

MPE calculations

MPE Calculator	Garmin	Test Number	090619
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)	2
	Output Power (Watts)	dBi to dBd	2.17
Tx Frequency (MHz)	1030	dBd + 2.17 = dBi	-0.17
		Antenna minus cable (dBi)	2.00
Cable Loss (dB)	0.0	(dBm)	44.67
	Calculated ERP (mw)	28175.240	Radiated (EIRP) dBm
	Calculated EIRP (mw)	46437.371	Radiated (ERP) dBm
			44.499
Occupational Limit			
	3.43333	mW/cm ²	
<div style="border: 1px solid black; padding: 5px; display: inline-block;"> Power density (S) = EIRP ----- = mW/cm² 4 π r² [r (cm), EIRP (mW)] </div>			
General Public Limit			
	0.68667	mW/cm 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 (mW/cm ²)	Public Limit @ Tx Freq (mW/cm ²)	
300-1,500	3.433333333	0.686666667	
1,500-10,000	5	1	
	EIRP	Distance	Distance
	milliwatts	cm	inches
	46437.371	100.00	39.37
	46437.371	90.00	35.43
	46437.371	80.00	31.50
	46437.371	75.00	29.53
	46437.371	74.00	29.13
	46437.371	70.00	27.56
	46437.371	60.00	23.62
	46437.371	50.00	19.69
	46437.371	40.00	15.75
	46437.371	35.00	13.78
	46437.371	34.00	13.39
	46437.371	33.00	12.99
	46437.371	32.00	12.60
	46437.371	30.00	11.81
	46437.371	25.00	9.84
			S
			mW/cm ²
			0.37
			0.46
			0.58
			0.66
			0.67
			0.75
			1.03
			1.48
			2.31
			3.02
			3.20
			3.39
			3.61
			4.11
			5.91
	Frequency (MHz)	Occupational Limit minimum Distance (cm)	Public Limit minimum distance (cm)
	300-1,500	N/A	N/A
	1,500-10,000	33.00	74.00