

# MPE Calculation page

MPE Calculator	Garmin	Test Number	100711
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 <sup>2</sup>	Antenna Gain (dBi)	1
	Output Power	dBd + 2.17 = dBi	dBi to dBd 2.17
Tx Frequency (MHz)	2457	(Watts) 0.000059	-1.17
			Antenna minus cable (dBi) 1.00
Cable Loss (dB)	0.0	(dBm) -12.26	
	Calculated ERP (mw) 0.045		Radiated (EIRP) dBm -11.260
	Calculated EIRP (mw) 0.075		
			Radiated (ERP) dBm -13.430
<b>Occupational Limit</b>	<b>5.00000</b> mW/cm <sup>2</sup>	<div style="border: 1px solid black; padding: 5px; width: fit-content;">                     Power density (S) =                      EIRP                      ----- = mW/cm<sup>2</sup>                      4 p r<sup>2</sup>                      [ r (cm), EIRP (mW)]                 </div>	
<b>General Public Limit</b>	<b>1.00000</b> mW/cm <sup>2</sup>		
FCC radio frequency radiation exposure limits per 1.1310			
	Frequency (MHz)	Occupational Limit	Public Limit
	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 <sup>2</sup> )	Public Limit @ Tx Freq (mW/cm <sup>2</sup> )
	300-1,500	8.19	1.638
	1,500-100,000	5	1
	EIRP	Distance	Distance
	milliwatts	cm	inches
	0.075	50.00	19.69
	0.075	40.00	15.75
	0.075	30.00	11.81
	0.075	20.00	7.87
	0.075	10.00	3.94
	0.075	5.00	1.97
	0.075	4.00	1.57
	0.075	3.00	1.18
	0.075	2.00	0.79
	0.075	1.00	0.39
	0.075	0.50	0.20
	0.075	0.32	0.13
	0.075	0.20	0.08
	0.075	0.10	0.04
	0.075	0.08	0.03
	S		
	mW/cm <sup>2</sup>		
	0.00000		
	0.00000		
	0.00001		
	0.00001		
	0.00006		
	0.00024		
	0.00037		
	0.00066		
	0.00149		
	0.00595		
	0.02381		
	0.05814		
	0.14884		
	0.59537		
	0.93027		
	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	0.08 / 0.03	0.08 / 0.03