

# MPE Calculation page

MPE Calculator	Garmin	Test Number	100408
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)	0.000200
			-1.17
Cable Loss (dB)	0.0	(dBm)	-6.99
		Antenna minus cable (dBi)	1.00
	Calculated ERP (mw)	0.153	Radiated (EIRP) dBm
	Calculated EIRP (mw)	0.252	
			Radiated (ERP) dBm
			-8.160
<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 π 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
	0.252	50.00	19.69
	0.252	40.00	15.75
	0.252	30.00	11.81
	0.252	20.00	7.87
	0.252	10.00	3.94
	0.252	5.00	1.97
	0.252	4.00	1.57
	0.252	3.00	1.18
	0.252	2.00	0.79
	0.252	1.00	0.39
	0.252	0.50	0.20
	0.252	0.32	0.13
	0.252	0.20	0.08
	0.252	0.15	0.06
	0.252	0.10	0.04
	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	0.10 / 0.04	0.15 / 0.06