

MPE Calculation page

Garmin		Test Number:	121030		
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				
Transmitter maximum Output power operating at 100% (Watts)	1.1324	Antenna Gain (dBi)	1		
Tx Frequency (MHz)	4300	Calculation power (Watts)	1.1324	dBi to dBd	2.2
Cable Loss (dB)	0.0	(dBm)	30.54	Antenna Gain (dBd)	-1.17
				Antenna minus cable (dB)	1.00
Calculated ERP (mw)	864.968			EIRP = Po(dBm) + Gain (dB)	
Calculated EIRP (mw)	1425.608			Radiated (EIRP) dBm	31.540
Occupational Limit				ERP = EIRP - 2.17 dB	
1.00000 mW/cm ²		Power density (S)		Radiated (ERP) dBm	29.370
10.00000 W/m ²		EIRP			
General Public Limit		----- = mW/cm ²			
0.20000 mW/cm ²		4 π r ²			
2.00000 W/m ²		r (cm) EIRP (mW)			
FCC radio frequency radiation exposure limits per 1.1310					
Frequency (MHz)	Occupational Limit	Public Limit			
30-300 (mW/cm ²)	1	0.2			
300-1,500 (mW/cm ²)	f/300	f/1500			
1,500-10,000 (mW/cm ²)	5	1			
FCC radio frequency radiation exposure limits per 1.1310					
Frequency (MHz)	Occupational Limit @ Tx Freq	Public Limit @ Tx Freq			
30-300 (mW/cm2)	1	0.2			
30-300 (W/m2)	10	2			
300-1,500 (mW/cm2)	14.33333333	2.866666667			
300-1,500 (W/m2)	143.3333333	28.66666667			
1,500-10,000 (mW/cm2)	5	1			
1,500-10,000 (W/m2)	50	10			
EIRP	S	S	Distance	Distance	Distance
milliwatts	mW/cm ²	W/m ²	cm	meter	inches
1425.608	0.00284	0.02836	200.00	2.00	78.74
1425.608	0.00314	0.03143	190.00	1.90	74.80
1425.608	0.00350	0.03501	180.00	1.80	70.87
1425.608	0.00393	0.03925	170.00	1.70	66.93
1425.608	0.00443	0.04431	160.00	1.60	62.99
1425.608	0.00504	0.05042	150.00	1.50	59.06
1425.608	0.01134	0.11345	100.00	1.00	39.37
1425.608	0.04538	0.45378	50.00	0.50	19.69
1425.608	0.07090	0.70904	40.00	0.40	15.75
1425.608	0.12605	1.26051	30.00	0.30	11.81
1425.608	0.28362	2.83616	20.00	0.20	7.87
1425.608	0.50421	5.04206	15.00	0.15	5.91
1425.608	1.13446	11.34462	10.00	0.10	3.94
1425.608	4.53785	45.37850	5.00	0.05	1.97
1425.608	4.92388	49.23882	4.80	0.05	1.89
1425.608	7.09039	70.90390	4.00	0.04	1.57
1425.608	12.60514	126.05139	3.00	0.03	1.18
Frequency (MHz)					
30-300	Occupational Limit minimum Distance (meters)	Occupational Limit minimum Distance (cm / inches)	Public Limit minimum distance (meters)	Public Limit minimum distance (cm / inches)	
300-1,500	0.05	4.8 / 1.9	N/A	N/A	
1,500-10,000	N/A	N/A	N/A	N/A	