

MPE Calculation page

Garmin	Model: Astro 320	Test Number:	110420			
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	
		Output Power		dBd + 2.17 = dBi	dBi to dBd	
		Maximum (Watts)	0.000370		Antenna Gain (dBd)	
Tx Frequency (MHz)	2457				-1.17	
Cable Loss (dB)	0.0	(dBm)	-4.32		Antenna minus cable (dBi)	
					1.00	
	Calculated ERP (mw)	0.282		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	0.466			Radiated (EIRP) dBm	
					-3.320	
				ERP = EIRP - 2.17 dB		
					Radiated (ERP) dBm	
					-5.490	
Occupational Limit	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Power density (S) EIRP ----- = mW/cm² 4 π r² r (cm) EIRP (mW) </div>					
5.00000 mW/cm ²						
50.00000 W/m ²						
General Public Limit						
1.00000 mW/cm ²						
10.00000 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			
	300-1,500 (mW/cm2)	8.19	1.638			
	300-1,500 (W/m2)	81.9	16.38			
	1,500-10,000 (mW/cm2)	5	1			
	1,500-10,000 (W/m2)	50	10			
EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm ²	W/m ²	cm	meter	inches	Feet
0.466	0.00037	0.00371	10.00	0.10	3.94	0.01
0.466	0.00046	0.00457	9.00	0.09	3.54	0.01
0.466	0.00058	0.00579	8.00	0.08	3.15	0.01
0.466	0.00076	0.00756	7.00	0.07	2.76	0.01
0.466	0.00103	0.01029	6.00	0.06	2.36	0.01
0.466	0.00148	0.01482	5.00	0.05	1.97	0.00
0.466	0.00232	0.02316	4.00	0.04	1.57	0.00
0.466	0.00412	0.04117	3.00	0.03	1.18	0.00
0.466	0.00926	0.09263	2.00	0.02	0.79	0.00
0.466	0.03705	0.37050	1.00	0.01	0.39	0.00
0.466	0.04574	0.45741	0.90	0.009	0.35	0.001
0.466	0.05789	0.57891	0.80	0.008	0.31	0.001
0.466	0.07561	0.75613	0.70	0.007	0.28	0.001
0.466	0.10292	1.02917	0.60	0.006	0.24	0.001
0.466	0.14820	1.48201	0.50	0.005	0.20	0.000
0.466	0.23156	2.31564	0.40	0.004	0.16	0.000
0.466	0.41167	4.11668	0.30	0.003	0.12	0.000
			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	N/A	N/A
		1,500-10,000	N/A	N/A	N/A	N/A