

MPE Calculation page

Garmin	Model: GIA 63W	Test Number:	121106			
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)	21.6770		Antenna Gain (dBi)	1	
	Output Power for 50% duty Cycle operation (Watts)	10.8385		dBi to dBd	2.2	
Tx Frequency (MHz)	127	Calculation power (Watts)	10.8385	Antenna Gain (dBd)	-1.17	
Cable Loss (dB)	0.0	(dBm)	40.35	Antenna minus cable (dBi)	1.00	
	Calculated ERP (mw)	8278.850		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	13644.889		Radiated (EIRP) dBm	41.350	
				ERP = EIRP - 2.17 dB		
				Radiated (ERP) dBm	39.180	
Occupational Limit		Power density (S) EIRP ----- = mW/cm² 4 π r² r (cm) EIRP (mW)				
1.00000	mW/cm ²					
10.00000	W/m ²					
General Public Limit						
0.20000	mW/cm ²					
2.00000	W/m ²					
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/cm ²)	1	0.2			
	30-300 (W/m ²)	10	2			
	300-1,500 (mW/cm ²)	0.423333333	0.084666667			
	300-1,500 (W/m ²)	4.233333333	0.846666667			
	1,500-10,000 (mW/cm ²)	5	1			
	1,500-10,000 (W/m ²)	50	10			
EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm ²	W/m ²	cm	meter	inches	Feet
13644.889	0.02715	0.27146	200.00	2.00	78.74	0.17
13644.889	0.03008	0.30078	190.00	1.90	74.80	0.16
13644.889	0.03351	0.33513	180.00	1.80	70.87	0.15
13644.889	0.03757	0.37572	170.00	1.70	66.93	0.14
13644.889	0.04242	0.42415	160.00	1.60	62.99	0.13
13644.889	0.04826	0.48259	150.00	1.50	59.06	0.13
13644.889	0.05540	0.55399	140.00	1.40	55.12	0.12
13644.889	0.06949	0.69493	125.00	1.25	49.21	0.10
13644.889	0.10858	1.08583	100.00	1.00	39.37	0.08
13644.889	0.43433	4.34330	50.00	0.50	19.69	0.04
13644.889	0.56086	5.60860	44.00	0.44	17.32	0.04
13644.889	0.67864	6.78641	40.00	0.40	15.75	0.03
13644.889	0.99709	9.97085	33.00	0.33	12.99	0.03
13644.889	1.20647	12.06473	30.00	0.30	11.81	0.03
13644.889	2.71456	27.14564	20.00	0.20	7.87	0.02
13644.889	10.85826	108.58258	10.00	0.10	3.94	0.01
13644.889	43.43303	434.33030	5.00	0.05	1.97	0.00
FCC radio frequency radiation exposure limits per 1.1310						
	Frequency (MHz)	Occupational Limit minimum Distance (meters)	Occupational Limit minimum Distance (cm / inches)	Public Limit minimum distance (meters)	Public Limit minimum distance (cm / inches)	
	30-300	0.33	33 / 13	N/A	N/A	
	300-1,500	N/A	N/A	N/A	N/A	
	1,500-10,000	N/A	N/A	N/A	N/A	