

MPE Calculation page

Garmin	Model: eTrex 30	Test Number:	110614			
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	2.2
Tx Frequency (MHz)	2457	Maximum (Watts)	0.000592		Antenna Gain (dBd)	-1.17
Cable Loss (dB)	0.0	(dBm)	-2.28		Antenna minus cable (dBi)	1.00
	Calculated ERP (mw)	0.452		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	0.745			Radiated (EIRP) dBm	-1.280
					ERP = EIRP - 2.17 dB	
	Occupational Limit				Radiated (ERP) dBm	-3.450
	5.00000 mW/cm ²	<div style="border: 1px solid black; padding: 5px;"> Power density (S) EIRP ----- = mW/cm² 4 π r² r (cm) EIRP (mW) </div>				
	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/cm ²)	8.19	1.638			
	300-1,500 (W/m ²)	81.9	16.38			
	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
0.745	0.00059	0.00593	10.00	0.10	3.94	0.01
0.745	0.00073	0.00732	9.00	0.09	3.54	0.01
0.745	0.00093	0.00926	8.00	0.08	3.15	0.01
0.745	0.00121	0.01209	7.00	0.07	2.76	0.01
0.745	0.00165	0.01646	6.00	0.06	2.36	0.01
0.745	0.00237	0.02371	5.00	0.05	1.97	0.00
0.745	0.00370	0.03704	4.00	0.04	1.57	0.00
0.745	0.00658	0.06585	3.00	0.03	1.18	0.00
0.745	0.01482	0.14816	2.00	0.02	0.79	0.00
0.745	0.05926	0.59264	1.00	0.01	0.39	0.00
0.745	0.07317	0.73165	0.90	0.009	0.35	0.001
0.745	0.09260	0.92600	0.80	0.008	0.31	0.001
0.745	0.10536	1.05358	0.75	0.008	0.30	0.001
0.745	0.12095	1.20947	0.70	0.007	0.28	0.001
0.745	0.23706	2.37056	0.50	0.005	0.20	0.000
0.745	0.37040	3.70399	0.40	0.004	0.16	0.000
0.745	0.48379	4.83787	0.35	0.004	0.14	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