

MPE calculations

Garmin	Model: GTX 3000		Test Number: 111129			
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 Calculated Average Power utilized worst-case possible configuration and interrogation options					
	Maximum Putput Power (Watts)		500		Antenna Gain (dBi)	5.1
	Output Power at 1% Duty Cycle		5 (Watts)		dBd + 2.17 = dBi	dBi to dBd 2.2
Tx Frequency (MHz)	1090	Maximum (Watts)	5.0000	Antenna Gain (dBd)		2.93
Cable Loss (dB)	0.0	(dBm)	36.99	Antenna minus cable (dBi)		5.10
	Calculated ERP (mw)	9816.801	EIRP = Po(dBM) + Gain (dB)			
	Calculated EIRP (mw)	16179.683	RADIATED (EIRP) dBm		42.090	
	Occupational Limit	Power density (S) EIRP ----- = mW/cm^2 4 p r^2 r (cm) EIRP (mW)	RADIATED (ERP) dBm		39.920	
3.63333	mW/cm^2					
36.33333	W/m^2					
General Public Limit						
0.72667	mW/cm^2					
7.26667	W/m^2					
	FCC radio frequency radiation exposure limits per 1.1310					
	Frequency (MHz)	Occupational Limit	Public Limit			
	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 (mW/cm^2)			
	300-1,500 (mW/cm2)	3.633333333	0.726666667			
	300-1,500 (W/m2)	36.33333333	7.266666667			
	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
16179.683	0.12875	1.28754	100.00	1.00	39.37	0.08
16179.683	0.15896	1.58955	90.00	0.90	35.43	0.08
16179.683	0.20118	2.01178	80.00	0.80	31.50	0.07
16179.683	0.26276	2.62763	70.00	0.70	27.56	0.06
16179.683	0.35765	3.57650	60.00	0.60	23.62	0.05
16179.683	0.51502	5.15015	50.00	0.50	19.69	0.04
16179.683	0.63582	6.35821	45.00	0.45	17.72	0.04
16179.683	0.66505	6.65051	44.00	0.44	17.32	0.04
16179.683	0.69634	6.96343	43.00	0.43	16.93	0.04
16179.683	0.72990	7.29897	42.00	0.42	16.54	0.04
16179.683	0.76594	7.65936	41.00	0.41	16.14	0.03
16179.683	0.80471	8.04711	40.00	0.40	15.75	0.03
16179.683	1.43060	14.30598	30.00	0.30	11.81	0.03
16179.683	3.21885	32.18846	20.00	0.20	7.87	0.02
16179.683	3.56659	35.66588	19.00	0.19	7.48	0.02
16179.683	5.72239	57.22392	15.00	0.15	5.91	0.01
16179.683	12.87538	128.75383	10.00	0.10	3.94	0.01
		Frequency (MHz)	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	0.19	19 / 7.5	0.42	42 / 16.5
		1,500-10,000	N/A	N/A	N/A	N/A

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Revision 1

Garmin International, Inc.
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