MPE calculations

Garmin	Model: GDR 66		Test Number:	120119		
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)		20.7491		Antenna Gain (dBi)	1
	Output Power for 50% duty Cycle operation (Watts)		10.3746	dBd + 2.17 = dBi	dBi to dBd	2.2
Tx Frequency (MHz)	127	Maximum (Watts)	10.3746		Antenna Gain (dBd)	-1.17
Cable Loss (dB)	0.0	(dBm)	40.16		Antenna minus cable (dBi)	1.00
	Calculated ERP (mw)	7924.466			EIRP = Po(dBM) + Gain (dB)	
	Calculated EIRP (mw)	13060.807			Radiated (EIRP) dBm	41.160
					ERP = EIRP - 2.17 dB	
Occupational Limit					Radiated (ERP) dBm	38.990
1.00000	mW/cm^2					
10.00000	W/m^2					
General Public Limit						
0.20000	mW/cm^2					
2.00000	W/m^2					

Power density (S)

EIRP
------- = mW/cm^2
4 p r^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)	0.423333333	0.084666667
300-1,500 (W/m2)	4.233333333	0.846666667
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
13060.807	0.02598	0.25984	200.00	2.00	78.74	0.17
13060.807	0.03394	0.33938	175.00	1.75	68.90	0.15
13060.807	0.04619	0.46193	150.00	1.50	59.06	0.13
13060.807	0.06652	0.66518	125.00	1.25	49.21	0.10
13060.807	0.10393	1.03935	100.00	1.00	39.37	0.08
13060.807	0.12831	1.28314	90.00	0.90	35.43	0.08
13060.807	0.16240	1.62398	80.00	0.80	31.50	0.07
13060.807	0.21211	2.12111	70.00	0.70	27.56	0.06
13060.807	0.28871	2.88707	60.00	0.60	23.62	0.05
13060.807	0.41574	4.15738	50.00	0.50	19.69	0.04
13060.807	0.64959	6.49591	40.00	0.40	15.75	0.03
13060.807	0.84845	8.48446	35.00	0.35	13.78	0.03
13060.807	0.89909	8.99088	34.00	0.34	13.39	0.03
13060.807	0.95440	9.54404	33.00	0.33	12.99	0.03
13060.807	1.01499	10.14986	32.00	0.32	12.60	0.03
13060.807	1.08153	10.81525	31.00	0.31	12.20	0.03
13060.807	1.15483	11.54829	30.00	0.30	11.81	0.03

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	0.32	32 / 12.6	N/A	N/A
1,500-10,000	N/A	N/A	N/A	N/A