MPE Calculation page

MPE Calculator	Garmin			Test Number	090730A	
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)		2.2
		Output Power	dBd + 2.17 = dBi	dBi to dBd		2.17
Tx Frequency (MHz)	2441	(Watts)	0.000521			0.03
				Antenna minus cable (dBi)		2.20
Cable Loss (dB)	0.0	(dBm)	-2.83			
Calculated ERP (mw)	0.525			Radiated (EIRP) dBm		-0.629
Calculated EIRP (mw)	0.865					
				Radiated (ERP) dBm		-2.799

Occupational Limit

5.00000 mW/cm^2

$$\text{Power density } (S) = \frac{EIRP}{4\,p\,r^2} = mW/cm\text{\textasciicircum}2$$
$$[\; r\,(cm),\quad EIRP\,(mW)\;]$$

General Public Limit

1.00000 mW/cm^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 (mW/cm^2)	Public Limit @ Tx Freq (mW/cm^2)
300-1,500	8.136666667	1.627333333
1,500-10,000	5	1

EIRP	Distance	Distance	S
milliwatts	cm	inches	mW/cm^2
0.865	10.00	3.94	0.00069
0.865	9.00	3.54	0.00085
0.865	8.00	3.15	0.00108
0.865	7.00	2.76	0.00141
0.865	6.00	2.36	0.00191
0.865	5.00	1.97	0.00275
0.865	4.00	1.57	0.00430
0.865	3.00	1.18	0.00765
0.865	2.00	0.79	0.01721
0.865	1.00	0.39	0.06885
0.865	0.50	0.20	0.27540
0.865	0.40	0.16	0.43032
0.865	0.30	0.12	0.76501
0.865	0.26	0.10	1.01851
0.865	0.20	0.08	1.72128

Frequency (MHz)	Occupational Limit minimum Distance (cm)	Public Limit minimum distance (cm)
300-1,500	N/A	N/A
1,500-10,000	N/A	0.26