MPE Calculation page

Lectrosonics		IFBT4VHF	Test Number:	150821		
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)	3
		Output Power		dBd + 2.17 = dBi	dBi to dBd	2.2
Tx Frequency (MHz)	195.1	Maximum (Watts)	0.050003		Antenna Gain (dBd)	0.83
Cable Loss (dB)	0.0	(dBm)	16.99		Antenna minus cable (dBi)	3.00
	Calculated ERP (mw)	60.534		EIRP = Po(dBM) + Gain (dB)		
	Calculated EIRP (mw)	99.770			Radiated (EIRP) dBm	19.990
				ERP = EIRP - 2.17 dB		
	Occupational Limit				Radiated (ERP) dBm	17.820
0.6455*f*0.5	W/m^2					
0.84025	W/m^2					
	General Public Limit					
1.29100	W/m^2					
1.29100	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
300-1,500	f/300	f/1500
1,500-10,000	5	1

IC radio frequency radiation exposure limits per RSS-102		
Frequency (MHz)	Occupational Limit (W/m^2)	Public Limit (W/m^2)
100-6,000	$0.6455f^{0.5}$	
6,000-15,000	50	
48-300		1.291
300-6,000		$0.02619f^{0.6834}$
6,000-15,000	50	10

EIRP	S	S	Distance	Distance	Distance	Distance
milliwatts	mW/cm^2	W/m^2	cm	meter	inches	Feet
99.770	0.00098	0.00980	90.00	0.90	35.43	2.95
99.770	0.00124	0.01241	80.00	0.80	31.50	2.62
99.770	0.00162	0.01620	70.00	0.70	27.56	2.30
99.770	0.00221	0.02205	60.00	0.60	23.62	1.97
99.770	0.00318	0.03176	50.00	0.50	19.69	1.64
99.770	0.00496	0.04962	40.00	0.40	15.75	1.31
99.770	0.00882	0.08822	30.00	0.30	11.81	0.98
99.770	0.01985	0.19849	20.00	0.20	7.87	0.66
99.770	0.07939	0.79394	10.00	0.10	3.94	0.33
99.770	0.09802	0.98018	9.00	0.09	3.54	0.30
99.770	0.12405	1.24054	8.00	0.080	3.15	0.26
99.770	0.16203	1.62029	7.00	0.070	2.76	0.23
99.770	0.22054	2.20540	6.00	0.060	2.36	0.20
99.770	0.31758	3.17578	5.00	0.050	1.97	0.16
99.770	0.49622	4.96215	4.00	0.040	1.57	0.13
99.770	0.88216	8.82161	3.00	0.030	1.18	0.10
99.770	1.27031	12.70311	2.50	0.025	0.98	0.08

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	N/A	N/A	0.03	2.5 / 0.98
1,500-10,000	N/A	N/A	N/A	N/A