

MPE Calculation page

MPE Calculator	Trig Avionics	Test Number	090507	
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)	1090	(Watts)	141.250000	
			Antenna minus cable (dBi) 2.20	
Cable Loss (dB)	0.0	(dBm)	51.50	
	Calculated ERP (mw)	142229.098	Radiated (EIRP) dBm 53.700	
	Calculated EIRP (mw)	234416.651	Radiated (ERP) dBm 51.530	
Occupational Limit				
5.00000	mW/cm ²	<div style="border: 1px solid black; padding: 5px; width: fit-content;"> Power density (S) = EIRP ----- = mW/cm² 4 p r² [r (cm), EIRP (mW)] </div>		
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	ƒ300	ƒ1500	
	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	3.633333333	0.726666667	
	1,500-10,000	5	1	
	EIRP	Distance	Distance	S
	milliwatts	cm	inches	mW/cm ²
	234416.651	300.00	118.11	0.21
	234416.651	250.00	98.43	0.30
	234416.651	200.00	78.74	0.47
	234416.651	175.00	68.90	0.61
	234416.651	162.00	63.78	0.71
	234416.651	140.00	55.12	0.95
	234416.651	135.00	53.15	1.02
	234416.651	130.00	51.18	1.10
	234416.651	120.00	47.24	1.30
	234416.651	110.00	43.31	1.54
	234416.651	100.00	39.37	1.87
	234416.651	90.00	35.43	2.30
	234416.651	80.00	31.50	2.91
	234416.651	72.00	28.35	3.60
	234416.651	70.00	27.56	3.81
	Frequency (MHz)	Occupational Limit minimum Distance (cm)	Public Limit minimum distance (cm)	
	300-1,500	N/A	N/A	
	1,500-10,000	72.00	162.00	