

MPE Calculation page

MPE Calculator Trig Avionics Test 080123
 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/cm²

Antenna Gain (dBi) **0**
 Output Power dBd + 2.17 = dBi dBi to dBd 2.17
 Tx Frequency (MHz) **1090** Average (Watts) **2.8000** Antenna Gain (dBd) **-2.17**
 Cable Loss (dB) **0.0** (dBm) 34.47 Antenna minus cable (dBi) 0.00

Calculated ERP (mw) 1698.862 EIRP = Po(dBm) + Gain (dB)
 Calculated EIRP (mw) 2800.000 Radiated (EIRP) dBm 34.472
 ERP = EIRP - 2.17 dB
 Radiated (ERP) dBm 32.302

Occupational Limit Power density (S)
3.63333 mW/cm² EIRP
 ----- = mW/cm²
General Public Limit 4 p r²
0.72667 mW/cm² 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

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	Distance
milliwatts	cm	inches	mW/cm ²	Feet
2800.000	1000.00	393.70	0.0022	32.80839895
2800.000	900.00	354.33	0.0028	29.52755906
2800.000	800.00	314.96	0.0035	26.24671916
2800.000	700.00	275.59	0.0045	22.96587927
2800.000	600.00	236.22	0.0062	19.68503937
2800.000	500.00	196.85	0.0089	16.40419948
2800.000	400.00	157.48	0.0139	13.12335958
2800.000	350.00	137.80	0.0182	11.48293963
2800.000	325.00	127.95	0.0211	10.66272966
2800.000	300.00	118.11	0.0248	9.842519685
2800.000	275.00	108.27	0.0295	9.022309711
2800.000	250.00	98.43	0.0357	8.202099738
2800.000	225.00	88.58	0.0440	7.381889764
2800.000	200.00	78.74	0.0557	6.56167979
2800.000	175.00	68.90	0.0728	5.741469816
2800.000	150.00	59.06	0.0990	4.921259843
2800.000	125.00	49.21	0.01426	4.101049869
2800.000	100.00	39.37	0.02228	3.280839895
2800.000	90.00	35.43	0.02751	2.952755906
2800.000	80.00	31.50	0.03482	2.624671916
2800.000	70.00	27.56	0.04547	2.296587927
2800.000	60.00	23.62	0.06189	1.968503937
2800.000	50.00	19.69	0.08913	1.640419948
2800.000	40.00	15.75	0.13926	1.312335958
2800.000	35.00	13.78	0.18189	1.148293963
2800.000	30.00	11.81	0.24757	0.984251969
2800.000	25.00	9.84	0.35651	0.820209974
2800.000	20.00	7.87	0.55704	0.656167979
2800.000	18.00	7.09	0.68771	0.590551181
2800.000	17.60	6.93	0.71932	0.577427822
2800.000	8.00	3.15	3.48151	0.262467192

Frequency (MHz)	Occupational Limit minimum Distance (cm.)	Public Limit minimum distance (cm)
300-1,500	8.00	17.60
1,500-10,000	N/A	N/A