

# MPE Calculation page

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 <sup>2</sup>					
				Antenna Gain (dBi)	11	
		Output Power		dBd + 2.17 = dBi		2.2
Tx Frequency (MHz)	915	Maximum (Watts)	0.291072	Antenna Gain (dBd)		8.83
Cable Loss (dB)	0.0	(dBm)	24.64	Antenna minus cable (dBi)		11.00
	Calculated ERP (mw)	2223.310		EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	3664.376		Radiated (EIRP) dBm		35.640
				ERP = EIRP - 2.17 dB		
<b>Occupational Limit</b>				Radiated (ERP) dBm		33.470
19.52571	W/m <sup>2</sup>	<div style="border: 1px solid black; padding: 5px;">                     Power density (S)                      EIRP                      ----- = mW/cm<sup>2</sup>                      4 p r<sup>2</sup>                      r (cm) EIRP (mW)                 </div>				
<b>General Public Limit</b>						
2.76675	W/m <sup>2</sup>					
IC radio frequency radiation exposure limits per RSS-102						
	Frequency (MHz)	Occupational Limit (W/m <sup>2</sup> )	Public Limit (W/m <sup>2</sup> )			
	100-6,000	0.6455 f <sup>-0.5</sup>				
	6,000-15,000	50				
	300-6,000		0.02619 f <sup>0.6834</sup>			
	6,000-15,000		10			
IC radio frequency radiation exposure limits per RSS-102						
	Frequency (MHz)	Occupational Limit (W/m <sup>2</sup> )	Public Limit (W/m <sup>2</sup> )			
	915	19.53	2.77			
EIRP	S (mW/cm <sup>2</sup> )	S (W/m <sup>2</sup> )	Distance	Distance	Distance	Distance
milliwatts	mW/cm <sup>2</sup>	W/m <sup>2</sup>	cm	meter	inches	Feet
3664.376	0.00117	0.01166	500.00	5.00	196.85	16.40
3664.376	0.00182	0.01823	400.00	4.00	157.48	13.12
3664.376	0.00324	0.03240	300.00	3.00	118.11	9.84
3664.376	0.00729	0.07290	200.00	2.00	78.74	6.56
3664.376	0.02916	0.29160	100.00	1.00	39.37	3.28
3664.376	0.03600	0.36000	90.00	0.90	35.43	2.95
3664.376	0.04556	0.45563	80.00	0.80	31.50	2.62
3664.376	0.05951	0.59511	70.00	0.70	27.56	2.30
3664.376	0.08100	0.81000	60.00	0.60	23.62	1.97
3664.376	0.11664	1.16641	50.00	0.50	19.69	1.64
3664.376	0.18225	1.82251	40.00	0.400	15.75	1.31
3664.376	0.23804	2.38042	35.00	0.350	13.78	1.15
3664.376	0.26777	2.67770	33.00	0.330	12.99	1.08
3664.376	0.32400	3.24002	30.00	0.300	11.81	0.98
3664.376	2.91602	29.16018	10.00	0.100	3.94	0.33
3664.376	1.92744	19.27436	12.30	0.123	4.84	0.40
3664.376	2.91602	29.16018	10.00	0.100	3.94	0.33
			Occupational Limit minimum Distance (meters)	Occupational Limit minimum Distance (cm / inches)	Public Limit minimum distance (meters)	Public Limit minimum distance (cm / inches)
	Frequency (MHz)					
	915		0.12	12.3 / 4.8	0.33	33 / 13