

MPE Calculator	Transcore	E4 Reader	Test 080508		
	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			Antenna Gain (dBi)	14
	S = power density in mW/cm <sup>2</sup>			dBd + 2.17 = dBi	
		Output Power		dBi to dBd	2.17
Tx Frequency (MHz)	915	(Watts)	2.0000	Antenna Gain (dBd)	11.83
		(dBm)	33.01		
Cable Loss (dB)	0.0			Antenna minus cable (dBi)	14.00
	Calculated ERP (mw)	30481.055	EIRP = Po(dBm) + Gain (dB)		
	Calculated EIRP (mw)	50237.729		Radiated (EIRP) dBm	47.010
			ERP = EIRP - 2.17 dB		
	<b>Occupational Limit</b>			Radiated (ERP) dBm	44.840
	3.05000 mW/cm <sup>2</sup>	<div style="border: 1px solid black; padding: 5px;">           Power density (S)            EIRP            ----- = mW/cm<sup>2</sup>  <math>4 \pi r^2</math>            r (cm) EIRP (mW)         </div>			
	<b>General Public Limit</b>				
	0.61000 mW/cm <sup>2</sup>				
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 <sup>2</sup> )	Public Limit @ Tx Freq (mW/cm <sup>2</sup> )		
	300-1,500	3.05	0.61		
	1,500-10,000	5	1		
	EIRP	Distance	Distance	S	
	milliwatts	cm	inches	mW/cm <sup>2</sup>	
	50237.729	200.00	78.74	0.100	
	50237.729	150.00	59.06	0.178	
	50237.729	100.00	39.37	0.400	
	50237.729	90.00	35.43	0.494	
	50237.729	81.00	31.89	0.609	
	50237.729	80.00	31.50	0.625	
	50237.729	70.00	27.56	0.816	
	50237.729	60.00	23.62	1.110	
	50237.729	50.00	19.69	1.599	
	50237.729	40.00	15.75	2.499	
	50237.729	36.00	14.17	3.085	
	50237.729	35.00	13.78	3.264	
	50237.729	30.00	11.81	4.442	
	50237.729	25.00	9.84	6.396	
	50237.729	20.00	7.87	9.994	
	50237.729	15.00	5.91	17.768	
	50237.729	10.00	3.94	39.978	
	50237.729	5.00	1.97	159.912	
	Frequency (MHz)	Occupational Limit minimum Distance cm (inches)	General Public Limit minimum Distance cm / (inches)		
	300-1,500	36 / (14.17")	81 / (31.89")		
	1,500-10,000	N/A	N/A		