

# MPE Calculation page

Trig Avionics	Model: TY92	Test Number:	120820A																								
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>																										
	Transmitter maximum Output power operating at 100% (Watts)	18.6209		Antenna Gain (dBi)	1																						
	Output Power for 50% duty Cycle operation (Watts)	9.3104	dBd + 2.17 = dBi	dBi to dBd	2.2																						
Tx Frequency (MHz)	127	Calculation power (Watts)	9.3104	Antenna Gain (dBd)	-1.17																						
Cable Loss (dB)	0.0	(dBm)	39.69	Antenna minus cable (dB)	1.00																						
	Calculated ERP (mw)	7111.644		EIRP = Po(dBm) + Gain (dB)																							
	Calculated EIRP (mw)	11721.144		Radiated (EIRP) dBm	40.690																						
				ERP = EIRP - 2.17 dB																							
				Radiated (ERP) dBm	38.520																						
<b>Occupational Limit</b>		<div style="border: 1px solid black; padding: 5px;">           Power density (S)            EIRP            ----- = mW/cm<sup>2</sup>            4 π r<sup>2</sup>            r (cm) EIRP (mW)         </div>																									
1.00000	mW/cm <sup>2</sup>																										
10.00000	W/m <sup>2</sup>																										
<b>General Public Limit</b>																											
0.20000	mW/cm <sup>2</sup>																										
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<b>FCC radio frequency radiation exposure limits per 1.1310</b>																											
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EIRP	S	S	Distance	Distance	Distance	Distance																					
milliwatts	mW/cm <sup>2</sup>	W/m <sup>2</sup>	cm	meter	inches	Feet																					
11721.144	0.02332	0.23318	200.00	2.00	78.74	0.17																					
11721.144	0.02584	0.25838	190.00	1.90	74.80	0.16																					
11721.144	0.02879	0.28788	180.00	1.80	70.87	0.15																					
11721.144	0.03227	0.32275	170.00	1.70	66.93	0.14																					
11721.144	0.03644	0.36435	160.00	1.60	62.99	0.13																					
11721.144	0.04146	0.41455	150.00	1.50	59.06	0.13																					
11721.144	0.04759	0.47589	140.00	1.40	55.12	0.12																					
11721.144	0.05970	0.59695	125.00	1.25	49.21	0.10																					
11721.144	0.09327	0.93274	100.00	1.00	39.37	0.08																					
11721.144	0.37310	3.73096	50.00	0.50	19.69	0.04																					
11721.144	0.48179	4.81787	44.00	0.44	17.32	0.04																					
11721.144	0.58296	5.82962	40.00	0.40	15.75	0.03																					
11721.144	0.97059	9.70592	31.00	0.31	12.20	0.03																					
11721.144	1.03638	10.36377	30.00	0.30	11.81	0.03																					
11721.144	1.49238	14.92382	25.00	0.25	9.84	0.02																					
11721.144	2.33185	23.31848	20.00	0.20	7.87	0.02																					
11721.144	9.32739	93.27390	10.00	0.10	3.94	0.01																					
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