EXPOSURE LIMITS FOR ELECTROMAGNETIC RADIATION

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$$d = \frac{2.D^2}{\lambda} \qquad P_d = \frac{t \,.\, x \,.\, P.G}{4.\ \pi \,.\, R^{\,2}} \qquad \Longrightarrow \qquad R = \sqrt{\frac{t \,.\, x \,.\, P.G}{4 \,.\, \pi \,.\, P_d}}$$

t = time exposure correction factor (referenced to 3.5 minutes)

near/far field boundary	d	1.40	m	
Transmission Frequency		173.075	MHz	
Wavelength	λ	1.733352593	m	
maximum dimension of the antenna	D	1.1	m	
Transmit Power	P	2	W	
Maximum Duty Cycle correction factor	x	0.10		x = 200ms burst every 2 seconds in Track mode
Mean Tx Power (inc. duty cycle)		0.20	W	
Gain of Antenna	G	1	dBi	
Linear Gain of Antenna		1.258925412		
Exposure Limit		2	W/m²	
		0.2	mW/cm²	ref 47 CFR §1.1310 Table 1 (Limits for MPE, General Population/Uncontrolled Exposure, 30-300MHz)
Power Density @ d (d=R)	P_d	0.0010	mW/cm²	
Safety margin @d		89.9	dB	
Exposure Limit in near field		0.6667	W/m²	
see note 1		0.0667	mW/cm²	Note 1: Applies 300% uncertainty factor for calculations in near field
Safe Distance from Antenna	**R**	**0.17**	**m**	Worst case scenario - Track Mode