

Environmental Assessment

Submitted by:

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Per CFR 47, section 1.1307.b(1), Table 1, all applications for experimental operations with an ERP greater than 100 watts require evaluation for compliance with human exposure limits defined in section 1.1310, and if exceeded require submission of an Environmental Assessment as defined in section 1.1311.

The below calculations define the minimum safe working distance for both Occupational and General Public, which are based on the maximum permissible exposure limits of 5 mW/cm² and 1 mW/cm² respectively. These calculations were conducted using the highest gain antenna.

TX Peak Power (mW)	50000000.00
TX Peak Power (dBm)	76.99
Maximum Antenna Gain dBi	33.00
EIRP (dBm)	109.99
Maximum Duty Cycle (Dc)	0.01
EIRP Watts	99763115.75
Avg EIRP Watts	1233072.11
TX Avg Power mW (Pavg)	
Pp*Dc	618000.00

Non Dimensional Antenna Gain	
Gt = 10^{dBi/10}	1995.262315

	Occupational	General Public
Minimum Safe Distance - Meters	44.5	100

Distance in Centimeters (R)	4450	10000
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AVG Power Density mW/CmCm		
Pd At distance=R		
(Pavg*Gt)/(4*Pi)*R²	4.955170347	0.981247608

This system is installed on the aircraft and will be used in flight.