Environmental Assessment

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/cm^2 and 1 mW/cm^2 respectively. These calculations were conducted using the highest gain antenna used in this operation. The antenna is 48 inch parabolic dish.

TX Peak Power (mW)	10500.00
TX Peak Power (dBm)	40.21
Maximum Antenna Gain dBi	41.10
EIRP (dBm)	81.31
Maximum Duty Cycle (Dc)	0.50
EIRP Watts	135266.20
Avg EIRP Watts	67633.10
TX Avg Power mW (Pavg)	
Pp*Dc	5250.00

	Occupational	General Public
Non Dimensional Antenna Gain		
Gt = 10$^{dBi/10}$	12882.49552	
Minimum Safe Distance - Meters	**8.92**	**19.95**
Distance in Centimeters (R)	892	1995
AVG Power Density mW/CmCm		
Pd At distance=R		
(Pavg*Gt)/(4*Pi)*R^2	**6.764251251**	**1.352270704**

The antenna will be operated in a controlled area, and will be directed towards the aircraft in flight. Only authorized occupational workers will be allowed access to the area of operation. In addition the transmitter will be secured prior to conducting maintenance, and the area will be monitored during the operation to ensure that personnel are clear of any radiation hazard area.