Environmental Assessment

The Boeing Company
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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/cm^2 and 1 mW/cm^2 respectively. These calculations were conducted using the highest gain antenna used in this operation.

TX Peak Power (mW)	325000
TX Peak Power (dBm)	55.11883361
Maximum Antenna Gain dBi	3
EIRP (dBm)	58.11883361
Maximum Duty Cycle (Dc)	1
EIRP Watts	648.4602524
Avg EIRP Watts	648.4602524
TX Avg Power mW (Pavg)	
Pp*Dc	325000

Non Dimensional Antenna Gain	
Gt = $10^{dBi/10}$	1.995262315

	Occupational	**General Public**
Minimum Safe Distance - Meters	**1.02**	**2.28**
Distance in Centimeters (R)	102	228
AVG Power Density mW/CmCm		
Pd At distance=R		
(Pavg*Gt)/(4*Pi)*R^2	**4.959902661**	**0.992667499**
	Max Value 5	**Max Value 1**

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The antenna will be operated in a controlled area and 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.