

Environmental Assessment

2/27/2014

The Boeing Company
Submitted by:
Allen S. Lindsay, SR
The Boeing Company
Frequency Management Service
Seattle, WA
(206) 544-6053

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 used in this operation.

TX Peak Power (mW)	79432.82	Enter Transmitter Peak Power in mW
TX Peak Power (dBm)	49.00	
Maximum Antenna Gain dBi	28.20	Enter Antenna Gain in dBi
EIRP (dBm)	77.20	
Maximum Duty Cycle (Dc)	1.00	Enter Maximum Duty Factor (PW x PPS)
EIRP Watts	52480.74	
Avg EIRP Watts	52480.74	
TX Avg Power mW (Pavg)		
Pp*Dc	79432.82	

Non Dimensional Antenna Gain		
Gt = 10 ^{dB/10}	660.693448	
	Occupational	General Public
Minimum Safe Distance - Meters	0.001	0.001
Distance in Centimeters (R)	0.1	0.1
AVG Power Density mW/CmCm		
Pd At distance=R		
(Pavg*Gt)/(4*Pi)*R ²	417628489.1	417628489.1
	Max Value 5	Max Value 1

Vary Distance in CM

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

Environmental Assessment

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.