Exhibit B

Radiation Hazard Study

1.0 Introduction

The antenna under assessment is a 0.4572 meter (18 inch) parabolic, Ku-band, steerable earth station dish, installed on the top of the fueslage of the aircraft. For a typical aircraft, the Airborne Earth Station ("AES") will be switched on at the same time that the cabin power busses are powered on. The system may transmit while the aircraft is on the ground in addition to normal operation in flight. Therefore, RF radiation may sometimes be present while passengers and crew are occupying or boarding the aircraft or when a ground crew is servicing the aircraft.

This antenna has a nominal elevation range of +5° to +85°, and mechanical stops prevent it from being steered below +5 degrees. The power levels are relatively low, so the hazardous region is relatively small and can be described with a straightforward analysis.

2.0 Governing Limits

The FCC's Office of Engineering Technology's Bulletin No. 65 specifies that there are two separate tiers of exposure limits that are dependant upon the situation in which the exposure takes place and/or the status of the individuals who are subject to the exposure. The two tiers are General Population / Uncontrolled environment, and an Occupational / Controlled environment.

The applicable exposure limit for the General Population / Uncontrolled environment, i.e., areas that people may enter freely, at this frequency of operation is 1 mW/cm2 average power density over a 30 minute period.

The applicable exposure limit for the Occupational / Controlled environment, i.e., areas that only authorized / trained personnel have access to, at this frequency of operation is 5 mW/cm2 average power density over a 6 minute period.

3.0 Summary Results

Figure 3-1 shows the on-axis power density as a function of range when the system is transmitting at its maximum output power. This Figure also identifies the various regions and power levels of concern.

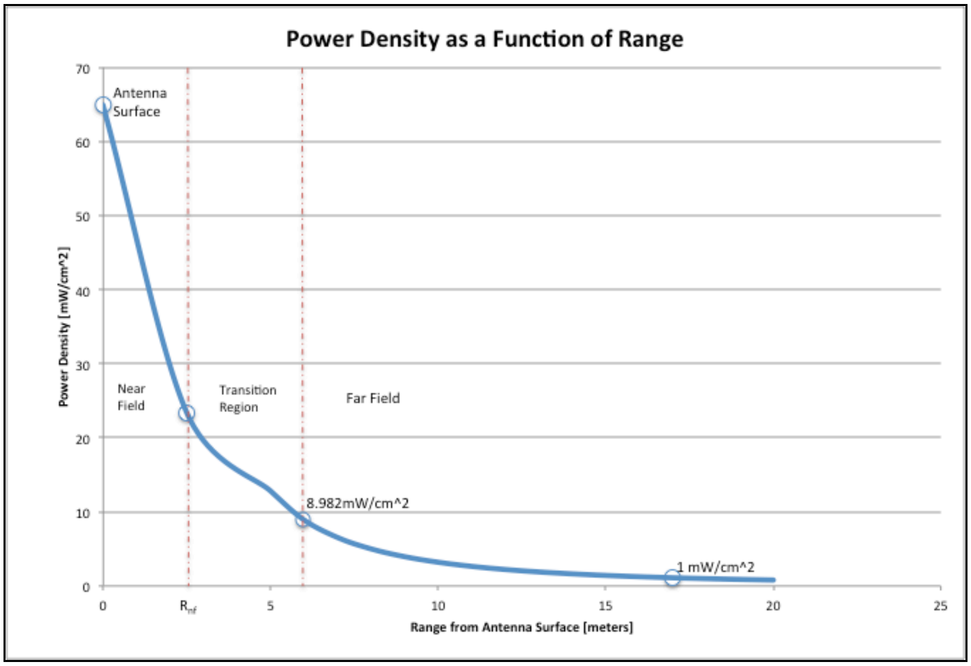

Figure 3-1. Power Density as a Function of Distance

Figure 3-2 relates the ranges in Figure 3-1 to an actual installation on a small aircraft. The outer contour marks the boundary between the safe and potentially hazardous regions of the uncontrolled environment; note that it does not impinge upon occupied space on the ground or on the aircraft. The inner contour marks the boundary of the potentially hazardous region of the Controlled environment. Note that these regions are only hazardous when the system is transmitting, which it does intermittently, depending on usage.

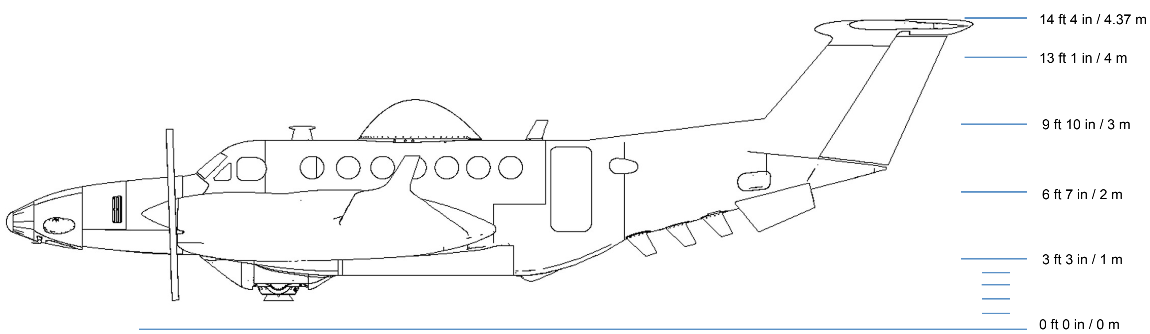

Figure 3-2. Aircraft Configuration

3.1 Summary of expected radiation levels for an Uncontrolled Environment

The table below summarizes the ranges and power densities associated with the uncontrolled environment.

Region	Maximum Power Density	Hazard Assessment
Safe Region = 17.88 meter	1.0 mW/cm^2	Satisfies FCC MPE
Far Field (R_{ff}) = 6 meter	8.982 mW/cm^2	Potential Hazard
Tansition Region (R_t) = $R_{nf} < R_t < R_{ff}$	23.410 mW/cm^2	Potential Hazard
Near Rield (R_{nf}) = 2.49 meter	23.410 mW/cm^2	Potential Hazard
Main Reflector Surface $S_{surface}$	39.017 mW/cm^2	Potential Hazard

It is understood that the power density level in the area between the feed and the reflector surface is greater than at the reflector surface and is assumed to be a potential hazard.

3.2 Summary of expected radiation levels for an controlled Environment

The table below summarizes the ranges and power densities associated with the controlled environment.

Region	Maximum Power Density	Hazard Assessment
Safe Region = 8 meter	5.0 mW/cm^2	Satisfies FCC MPE
Far Field (R_{ff}) = 6 meter	8.982 mW/cm^2	Potential Hazard
Tansition Region (R_t) = $R_{nf} < R_t < R_{ff}$	23.390 mW/cm^2	Potential Hazard
Near Rield (R_{nf}) = 2.49 meter	23.390 mW/cm^2	Potential Hazard
Main Reflector Surface $S_{surface}$	39.017 mW/cm^2	Potential Hazard

It is understood that the power density level in the area between the feed and the reflector surface is greater than at the reflector surface and is assumed to be a potential hazard.

3.3 Conclusions

The proposed earth station system will be located in an aircraft fuselage mount environment with controlled access during stationary testing and will be serviced by trained personnel. Based on the above analysis it is concluded that while harmful radiation levels will not exist in regions normally occupied by test personnel, there do exist small regions where a potential hazard exists for test personnel, which will be avoided through training.

4.0 Analysis

4.1 Definition of Terms

Antenna diameter (D) = 0.4572 meters

Wavelength (λ) = 0.0214 meters at 14.0 GHZ

Amplifier Power (P) = 16 Watts rated max at tha antenna flange

0.4572 meter Antenna Grain (G) = 34 dBi = 2511.9 at 14.0 Ghz

0.4572 meter Antenna Efficiency ($\eta 1$) = 0.6 (60% efficient)

4.2 Region Definition

The area of interest is broken up into three regions: near field, far field and a transition region. The limit of the near field (R_{nf}) and the beginning of the far field (R_{ff}) are calculated as follows.

Near Field Extent

$$R_{nf} = \frac{D^2}{4\lambda}$$

$$R_{nf} = \frac{(0.4572\text{ m})^2}{(4)(0.0214\text{ m})} = 2.49\text{ m}$$

Far Field Extent

$$R_{ff} = \frac{0.6D^2}{\lambda}$$

$$R_{ff} = \frac{(0.6)(0.4572\text{ m})^2}{0.0214\text{ m}} = 6\text{ m}$$

For the 0.4572 meter antenna, the region between 2.49 m and 6 m is designated as the transition region.

4.3 Field Strength

4.3.1 Near Field Region

The On Axis Near Field Strength is calculated as follows:

$$S_{nf} = \frac{16\eta P}{\pi D^2}$$

$$S_{nf} = \frac{(16)(0.60)(16W)}{(3.14)(0.4572m)^2}$$

$$S_{nf} = 233.9 \text{ W/m}^2 = 23.39 \text{ mW/cm}^2$$

4.3.2 Transition Region

The On Axis Field Strength in the transition region is calculated as follows:

$$S^t = \frac{S_{nf}R_{nf}}{R}$$

The maximum field strength in the transition region is when $R = R_{nf}$ at which point the field strength is $S_{nf} = 23.39$ mW/cm^2.

4.3.3 Far Field Region

The on axis field strength in the far field region is calculated as follows:

$$S_{ff} = \frac{PG}{4\pi R^2}$$

$$S_{ff} = \frac{(16W)(2511.9)}{(4)(3.14)(6 \text{ m})^2}$$

$$S_{ff} = 89.66 \text{ W/m}^2 = 8.966 \text{ mW/cm}^2$$

4.4 Safe Region for Uncontrolled Access

As given above, the power density in the far field region of the antenna pattern decreases inversely as the square of the distance. The distance to the point where the power density equals the 1 mW/cm^2 level can be determined by the equation:

$R_{1\ mW} = ((P * G) / (4 * \pi * 1 \text{ mW/cm}^2 * 10))^{0.5}$

$= ((16 \text{ W} * 2511.9) / (125.66 \text{ mW/cm}^2))^{0.5}$

$= 17.88$ m

4.5 Safe Region for Controlled Access

As given above, the power density in the far field region of the antenna pattern decreases inversely as the square of the distance. The distance to the point where the power density equals the 5 mW/cm^2 level can be determined by the equation:

$$R_{5\ mW} = ((P * G) / (4 * \pi * 5\ mW/cm^2 * 10))^{0.5}$$

$$= ((16\ W * 2511.9) / (628.3\ mW/cm^2)\ )^{0.5}$$

$$= 8\ m$$