

## Exhibit A

### Radiation Hazard Study

#### Tampa Microwave 1.3m Prime focus antenna KU band system

**Purpose:** The purpose of this study is to determine the Near Field and Far Field flux densities both on-axis and off-axis of the non-ionizing radiation for this fixed earth station. The results were then compared to the acknowledged ANSI maximum permissible exposure level (MPE) of five (5) milliwatt per square cm – 5 mW/cm<sup>2</sup> - over a 6 (six) minute exposure period. Please see conclusions below that confirms system complying with maximum permissible radiation of 5 mW per cm<sup>2</sup>.

The antenna is to be deployed only for a short period of time for occasional testing. A test normally run for a maximum of 1 hour and always manned. The antenna is deployed on private property backyard on top of an elevated platform.

#### **System description:**

Antenna Size: 1.3m, D

Antenna TX gain, G: 43.6

Antenna efficiency, A<sub>e</sub>: 60%

Transmitter: KU 16 W

Frequency 14.25 Ghz

Wavelength, λ= 0.02105 m

#### **Calculations:**

##### **Far Field**

- 1) **Far field distance:** Far field region distance,  $R_{ff} = 0.6D^2/\lambda = 48.17$  m
- 2) **Far Field Power density: On axis power density, S<sub>ff</sub>** =  $GP/4\pi R_{ff}^2 = 0.025$  W/m<sup>2</sup>,  
or 0.0025 mW/cm<sup>2</sup>
- 3) **Conclusion:** Far field power density is below the permissible exposure standard of 5 mW/cm<sup>2</sup>

##### **Near Field:**

- 1) **Near field extent: D<sup>2</sup>/4λ** = 19.65 m
- 2) **R<sub>nf</sub>** =  $16A_eP/\pi D^2 = 28.9$  W/m<sup>2</sup> \_or 2.89 mW/cm<sup>2</sup>
- 3) **Conclusion:** Near field power density is below the permissible exposure standard of 5 mW/cm<sup>2</sup>