Exhibit B. Ku-band Radiation Hazard Study.

D(Antenna size in m):	**1.5**
a (Major diameter in m):	**1.599**
b (Minor diameter in m):	**1.515**
Ga (Antenna gain in dBi):	**45.2 dBi @ 14.25 GHz**
G (Numeric antenna gain):	**33113.11**
P (HPA power output in W):	**33**
ERP (W):	**1092732.70**
f (midband frequency in MHz):	**14250**
C(velocity of radio waves in cm/sec):	**300*10^8**

A. Antenna surface max. power density:

Ssurface: **=4*P/A**

Where: P= power fed into the antenna

A= physical area of the aperture antenna= πab

A(cm²)= **76104.61**

Ssurface (mW/cm²)= **1.73**

B. Near field calculations:

Rnf= extent of near field in cm= D²/(4*λ)

Where: D= maximum dimension of antenna (dia. If circular)

λ= wavelength

λ (cm)= **C/f**

λ (cm)= **2.11**

Rnf (cm): **2671.88**

Max. value of the near field power density Snf= 16*η*P/(π)*D²

Where: η= aperture efficiency= (Gλ²/4π)/(πD²/4)

G= power gain in the direction of interest relative to an isotropic radiator

λ= wavelength

D= antenna diameter

η= **0.58**

Snf (mW/cm²): **3.82**

C. Off-axis power density in the near region:

The off-axis gain on the antenna to be used lies below the envelope defined by the following:

29-25*LOG(θ)	100λ/D<θ<20º
-3.5	20º<θ<26.4º
32-25*LOG(θ)	26.4º<θ<48º

Note: To calculate the off-axis power density in the near region, the relative gain of the antenna and its effect to the power density will need to be taken into account to calculate the power density at ground level.

Taking into account that the lowest elevation of the antenna to the satellite is at least 7º:

Off-axis gain (Goa in dBi): **7.87**

F (relative gain in dB): **37.33**

The off-axis power density (Soanf) in the near field region is calculated as follows:

Soanf=(10^(-F/10))*Sff

Soanf(mW/cm²)= **7.07E-04**

Soanf(μW/cm²)= **0.71**

D. Far field calculations:

Rff= distance to beginning of far field=0.6*D²/λ

Where: D= maximum dimension of antenna (dia. If circular)
λ= wavelength

Rff (cm)=	**7286.88**

Sff= On-axis Power density in the far field region= (P*G)/(4πR²)

Sff (mW/cm²)=	**1.64**

E. Off-axis power density in the far field region:

The off-axis gain on the antenna to be used lies below the envelope defined by the following:

29-25*LOG(θ)	100λ/D<θ<20º
-3.5	20º<θ<26.4º
32-25*LOG(θ)	26.4º<θ<48º

Note: To calculate the off-axis power density in the far region, the relative gain of the antenna and its effect to the power density will need to be taken into account to calculate the power density at ground level.

Taking into account that the lowest elevation of the antenna to the satellite is at least 7º:

Off-axis gain (Goa in dBi):	**7.87**
F (relative gain in dB):	**37.33**

The off-axis power density (Soaff) in the far field region is calculated as follows:

Soaff=(10^(-F/10))*Sff

Soaff (mW/cm²)=	**3.03E-04**
Soaff (μW/cm²)=	**0.30**

F. Conclusion:

The proposed Ku-band uplink system meets the maximum permissible exposure limits (MPE) (1 mW/cm²) for the General population/uncontrolled exposure as specified in the FCC document #OET bulletin 65 for satellite communications.