Exhibit Ba Analysis of Non-Ionizing Radiation

Antenna Diameter, (*D*) =	$D :=$ 1.8 meters	$D \cdot 3.281 =$	5.906 Feet
Antenna Surface Area, (*Sa*) =	$Sa := \pi \cdot \frac{D \cdot D}{4}$	$Sa =$	2.545 sq meters
Subreflector Diameter, (*Ds*) =	$Ds :=$ 0 cm	$Ds \cdot .3937 =$	0.000 Inches
Area of Subreflector, (*As*) =	$As := \pi \cdot \frac{Ds \cdot Ds}{4}$	$As =$	0.000 sq cm
Center Frequency, (*Cf*) =	$Cf :=$ 14.250 GHz		
Wavelength at (*Cf*), (*Lambda*) =	$Lambda :=$ 0.0211 meters C-Band = .049 Ku-Band = .0211		
Transmit Power at HPA or VPC Flange, (P1) =	P1 := 200.00 watts	$P2 := \log(P1) \cdot 10$	P2 = 23.010 dB
Path Loss from HPA or VPC to OMT, (IL) =	Loss := 0.62 dB		
Power at OMT, (*P*)=	P3 := P2 - Loss	P3 =	22.390 OMT Pwr in dB
	$P := 10^{\frac{P3}{10}}$	$P =$	173.39 OMT Pwr in watts
Antenna Gain at (*Cf*), (Gain)=	Gain := 46.50 dBi		
Antenna Gain Converted to Power Ratio, (*Ges*)=	$Ges := 10^{\frac{Gain}{10}}$	Ges =	4.467E+04 Ratio
Antenna Aperture Efficiency, (*n*)=	n := 0.6982		

Far Field (*Rf*)=	$Rf := \frac{.60 \cdot (D \cdot D)}{Lambda}$	$Rf =$ $Rf \cdot 3.281 =$	92.133 meters 302.29 feet
Far Field Power Density (*Wf*)=	$Wf := \frac{Ges \cdot P}{4 \cdot \pi \cdot (Rf \cdot Rf)} \cdot .1$	$Wf =$	7.261 mw sq cm
Near Field (*Rn*) =	$Rn := \frac{(D \cdot D)}{4 \cdot Lambda}$	$Rn =$ $Rf \cdot 3.281 =$	38.389 meters 125.953 feet
Near Field Power Density (*Wn*)=	$Wn := \frac{16 \cdot n \cdot P}{\pi \cdot (D \cdot D)} \cdot .1$	$Wn =$	19.030 mw sq cm
Transition Region (*Rt*)=	$Rt := Wn \cdot 1$	$Rt =$	19.030 mw sq cm (Equal to or less than)
Pwr Density at Sub Reflector (*Ws*)=	$Ws := \frac{2 \cdot P}{As} \cdot 1000$		N/A
Main Reflector Region Pwr Density (*Wm*)=	$Wm := \frac{2 \cdot P}{Sa} \cdot .1$	$Wm =$	13.628 mw sq cm
Pwr Density between main reflector and ground (*Wg*)=	$Wg := \frac{P}{Sa} \cdot .1$	$Wg =$	6.814 mw sq cm
Far Field Off Axis (*WF*)=	$WF := Wf \cdot .01$	$WF =$	0.073 mw sq cm
Near Field Off Axis (*WN*)=	$WN := Wn \cdot .01$	$WN =$	0.190 mw sq cm