

RADIATION CALCULATIONS FOR		0.60 meter EARTH STATION	
Nomenclature	Formula	Value	Unit
INPUT PARAMETERS			
M = Antenna Aperture Major Axis m = Antenna Aperture Minor Axis d = Diameter of Feed Mouth		0.60 0.60 0.029	meters meters meters
P = Max Power into Antenna		15.0	Watts
n = Apperture Efficiency		60%	
k = Wavelength @ 14.25 GHz		0.0210526	meters
CALCULATED VALUES			
A = Area of Reflector	$\pi \times M \times m / 4$	0.283	meters ²
l = Length of Near Field	$M^2 / 4k$	4	meters
L = Beginning of Far Field	$0.6M^2 / k$	10	meters
G = Antenna Gain @ 14.25 GHz	$n(4 \times \pi \times A) / k^2$	4,810	(36.8) dBi
a = Area of Feed Mouth	$\pi \times d^2 / 4$	0.0007	meters ²
POWER DENSITY CALCULATIONS			
Region	Maximum Power Density in Region		Hazard Assessment (FCC MPE Limit = 1 mW/cm ²)
	Formula	Value (mW/cm ²)	
1 Near Field	$4nP/A$	12.73	> FCC MPE Limit (See Attachment 1)
2 Far Field	$GP / (4(\pi)L^2)$	5.45	> FCC MPE Limit (See Attachment 1)
3 Transition	$\leq N_r$ Fld Region	12.73	> FCC MPE Limit (See Attachment 1)