

Radiation Hazard Analysis

Operator: **SES**
 Location Designation: **SES Woodbine**
 County: **Ventura**
 Town: **Somis**
 State/Zip: **CA 93066**

FCC Callsign:
 SES ID:
 STA:

Input Values	Value	Unit
D = Aperture Diameter	11.10	Meters
d = Subreflector Diameter	0.56	Meters
G = Antenna Gain	55.7	dBi
FCC Designation	C	Band
F = Frequency	6.000	GHz
P = Transmitter Power Watts:	500	Watts
R _{ua} = closest point to uncontrolled area	50	meters
Elevation angle at closest point R _{ua}	10	Degrees
Height (AGL)	15.00	meters

OET 65 Calculated Values	Formula	Value	Unit
λ = Wavelength	$\frac{c}{F}$	0.0500	meters
G = Antenna Gain	$10^{(G/10)}$	371535.2291	(W) linear
η = Apperture Efficiency	$\frac{G\lambda^2/4\pi}{\pi D^2/4}$	76%	percentage
A = Area of reflector	πR^2	96.769	meters ²
a = area of subreflector	πd^2	2463.009	cm ²
R _{nf} = Near-Field Region	$\frac{D^2}{4\lambda}$	616.461	meters
	4λ	107	Meters AGL
R _t = Transition Region	>R _{nf}	616.461	>meters
	<R _{ff}	1479.506	<meters
R _{ff} = Far Field Region	$\frac{0.6D^2}{\lambda}$	1479.506	meters
		257	Meters AGL

Band	Frequency
L	1000-2000
S	2000-4000
C	4000-8000
X	8000-12500
Ku	12500-18000
K	18000-25500
Ka	26500-40000
O	40000-50000
V	50000-75000

Radiation Analysis Zone	Formula	Level	Value	Exposure Limits		
				General Public	Occupational	
				<1mW/cm2	<5mW/cm2	
1	Power Subreflector	$\frac{4P}{a}$	812.015	mW/cm2	>FCC MPE See Note 1	>FCC MPE See Note 2
2	Antenna Surface	$\frac{4P}{A}$	2.067	mW/cm2	>FCC MPE See Note 1	<FCC MPE
3	Main Reflector Ground	$\frac{P}{A}$	0.517	mW/cm2	<FCC MPE	<FCC MPE
4	S _{nf} = Near-Field Power Density	$\frac{4\eta P}{A}$	1.577	mW/cm2	>FCC MPE See Note 1	<FCC MPE
5	S _t = Max Transition Power Density	≤ S _{nf}	1.577	mW/cm2	>FCC MPE See Note 1	<FCC MPE
6	S _{ff} = Max Far field Power Density	$\frac{PG}{4\pi R_{ff}^2}$	0.675	mW/cm2	<FCC MPE	<FCC MPE
7	Off Access Level Near Field	S _{nf} - 20 dB	0.01577	mW/cm2	<FCC MPE	<FCC MPE

Notes

- The antenna is installed in a controlled location access is restricted to authorized personnel only. The antenna is marked with RF Radiation Hazard signage.
- Inside the controlled area, MPE levels exceed the MPE exposure for occupational levels. The levels will be reduced to safe MPE by removing power to the transmitters when work is performed on or around the antenna. This area can only be accessed by qualified personnel.
- The field develops 15 meters above ground level at the minimum elevation angle which is not accessible to the general public.