

Exhibit C
Response to Question 28 for Napa, California Antenna

This attachment analyzes the power-flux density near the proposed transmit antenna. The antenna will be a square flat plate antenna 0.89m x 0.89m with transmit gain 22.2 dBi. The site will transmit a peak EIRP of 16.5 dBW. The power-flux density calculations in this exhibit are based on this peak EIRP value. These calculations follow the methodology outlined in OET Bulletin No. 65, "Evaluating Compliance with FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation." The power-flux density calculations are made for a transmitting frequency of 1660.5 MHz. At this frequency the maximum permissible exposure to RF fields in a controlled environment is 5 mW/cm².

The calculations are based on data provided by the antenna manufacturer. See Figure 1. The maximum allowable exposure value of 5 mW/cm² is equal to 7 dBmW/cm². From Figure 1, it can be seen that this value is never reached for the antenna at an input power level of 1 W. For the case that this application applies to, a 16.5 dBW signal out of a 22.2 dBi gain antenna, the input power is -5.7 dBW or 0.269W or 3.7 times smaller than the values of Figure 1. Therefore, the conclusion is the same, the maximum value of 5 mW/cm² is not reached for the case that this application applies to.

Conclusion

This site is in a controlled environment. The general public does not have access to the site where the transmit antenna is located. The maximum permissible exposure to RF fields in a controlled environment is 5 mW/cm² at L-band. The calculations show that the site will not exceed the permissible levels for exposure to RF radiation.

Figure 1: Antenna Power Density

Aperture size		0.89	m		Near field Power density (dBmW/cm ²)	Far field Power density (dBmW/cm ²)						
Power input		1.00	W			Distance (m)						
Frequency (GHz)		FF distance (m)	Gain (dBi)	Efficiency	1	8	9	10	11	12	13	
1.522	GHz	7.95	21.1	0.668	-3.62	-27.95	-28.98	-29.89	-30.72	-31.48	-32.17	
1.542	GHz	8.05	20.4	0.573	-4.29	-28.65	-29.68	-30.59	-31.42	-32.18	-32.87	
1.559	GHz	8.14	20.8	0.597	-4.11	-28.25	-29.28	-30.19	-31.02	-31.78	-32.47	
1.6265	GHz	8.49	21.1	0.608	-4.03	-27.95	-28.98	-29.89	-30.72	-31.48	-32.17	
1.6435	GHz	8.58	21.2	0.602	-4.07	-27.85	-28.88	-29.79	-30.62	-31.38	-32.07	
1.6605	GHz	8.67	22.2	0.79	-2.89	-26.85	-27.88	-28.79	-29.62	-30.38	-31.07	

