

Data in support of claim that proposed operation meets off-axis criteria of 1986 Declaratory Order

**ID** Applicant: IWL Comm. Date of Application: 11/10/05

**HEADING**

a1 Antenna Manufacturer: SeaTel c main bore gain  
 a2 Antenna Model: 2.4m d frequency at which gain was measured  
 a3 Antenna ID: Ant1 e maximum input power density (dBw/4KHz)  
 b Transmit band (b): 6.000 GHz

1.0 to 7 degrees calculated maximum difference in off-axis eirp density:

**TABLE**

1.0 to 180 degrees calculated maximum difference in off-axis eirp density:

EIRP for Antenna Conforming to 25.209(a) operating at 25.212 power density limits

| 1<br>Angle (degrees) | 2<br>25.209 Gain (dBi) | 3<br>Off-Axis EIRP Density for -2.70 dBw/4Kz |
|----------------------|------------------------|--|
| 1.00                 | 29.00                  | 26.30  |
| 1.10                 | 27.97                  | 25.27  |
| 1.20                 | 27.02                  | 24.32  |
| 1.25                 | 26.58                  | 23.88  |
| 1.30                 | 26.15                  | 23.45  |
| 1.40                 | 25.35                  | 22.65  |
| 1.50                 | 24.60                  | 21.90  |
| 1.60                 | 23.90                  | 21.20  |
| 1.70                 | 23.24                  | 20.54  |
| 1.80                 | 22.62                  | 19.92  |
| 1.90                 | 22.03                  | 19.33  |
| 2.00                 | 21.47                  | 18.77  |
| 2.10                 | 20.94                  | 18.24  |
| 2.20                 | 20.44                  | 17.74  |
| 2.30                 | 19.96                  | 17.26  |
| 2.40                 | 19.49                  | 16.79  |
| 2.50                 | 19.05                  | 16.35  |
| 2.60                 | 18.63                  | 15.93  |
| 2.70                 | 18.22                  | 15.52  |
| 2.80                 | 17.82                  | 15.12  |
| 2.90                 | 17.44                  | 14.74  |
| 3.00                 | 17.07                  | 14.37  |
| 3.33                 | 15.94                  | 13.24  |
| 3.67                 | 14.88                  | 12.18  |
| 4.00                 | 13.95                  | 11.25  |
| 4.33                 | 13.09                  | 10.39  |
| 4.67                 | 12.27                  | 9.57   |
| 5.00                 | 11.53                  | 8.83   |
| 5.33                 | 10.83                  | 8.13   |
| 5.67                 | 10.16                  | 7.46   |
| 6.00                 | 8.00                   | 5.30   |
| 7.00                 | 8.00                   | 5.30   |

Gain and EIRP for Antenna Not Conforming to 25.209(a) operating at stated maximum power density

| 4<br>Gain relative to main bore gain (dB) | 5<br>Actual Gain in dBi | 6<br>Off-Axis EIRP Density for input of -25.70 |
|---|-------------------------|--|
| -5.00                                     | 36.70                   | 11.00  |
| -6.00                                     | 35.70                   | 10.00  |
| -7.00                                     | 34.70                   | 9.00   |
| -7.50                                     | 34.20                   | 8.50   |
| -8.00                                     | 33.70                   | 8.00   |
| -9.05                                     | 32.65                   | 6.95   |
| -10.10                                    | 31.60                   | 5.90   |
| -11.15                                    | 30.55                   | 4.85   |
| -12.20                                    | 29.50                   | 3.80   |
| -15.47                                    | 26.23                   | 0.53   |
| -18.73                                    | 22.97                   | -2.73  |
| -22.00                                    | 19.70                   | -6.00  |
| -23.53                                    | 18.17                   | -7.53  |
| -25.07                                    | 16.63                   | -9.07  |
| -26.60                                    | 15.10                   | -10.60   |
| -26.73                                    | 14.98                   | -10.73   |
| -26.85                                    | 14.85                   | -10.85   |
| -26.98                                    | 14.73                   | -10.98   |
| -27.10                                    | 14.60                   | -11.10   |
| -29.07                                    | 12.63                   | -13.07   |
| -31.03                                    | 10.67                   | -15.03   |
| -33.00                                    | 8.70                    | -17.00   |
| -34.00                                    | 7.70                    | -18.00   |
| -31.00                                    | 10.70                   | -15.00   |
| -31.50                                    | 10.20                   | -15.50   |
| -38.00                                    | 3.70                    | -22.00   |
| -34.50                                    | 7.20                    | -18.50   |
| -31.70                                    | 10.00                   | -15.70   |
| -30.30                                    | 11.40                   | -14.30   |
| -32.00                                    | 9.70                    | -16.00   |
| -38.00                                    | 3.70                    | -22.00   |
| -34.00                                    | 7.70                    | -18.00   |



er

41.70 dBi  
5.93 GHz  
-25.70 dBw/4Khz

-15.27 dBw/4Khz  
-15.27

5.209(a)

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**Difference  
in Off-Axis  
EIRP Density  
(6) minus (3)**

-15.30  
-15.27  
-15.32  
-15.38  
-15.45  
-15.70  
-16.00  
-16.35  
-16.74  
-19.38  
-22.06  
-24.77  
-25.78  
-26.81  
-27.86  
-27.52  
-27.20  
-26.90  
-26.62  
-28.19  
-29.77  
-31.37  
-31.24  
-27.18  
-26.75  
-32.39  
-28.07  
-24.53  
-22.43  
-23.46  
-27.30  
-23.30

