

# **RF EMISSIONS COMPLIANCE REPORT**

## **Invisible Towers**

**Site: Brandermill Parkway  
2700 Brandermill Parkway  
Midlothian, VA  
7/15/2008**

### **Report Status:**

**Invisible Towers Is Under 5% Threshold**

**Prepared By:**

**SiteSafe, Inc.**

Engineering Statement in Re:  
Electromagnetic Energy Analysis  
Invisible Towers  
Midlothian, VA

Upon penalty of perjury, my signature on the cover of this document indicates:

That I am registered as a Professional Engineer in the jurisdiction indicated; and

That I have extensive professional experience in the wireless communications engineering industry; and

That I am an employee of Sitesafe, Inc. in Arlington, Virginia; and

That I am thoroughly familiar with the Rules and Regulations of the Federal Communications Commission ("the FCC" and "the FCC Rules") both in general and specifically as they apply to the FCC's Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; and

That the technical information serving as the basis for this report was supplied by Invisible Towers (See attached Site Summary and Carrier documents), and that Invisible Towers' installations involve communications equipment, antennas and associated technical equipment at a location referred to as the "Brandermill Parkway" ("the site"); and

That Invisible Towers proposes to operate at the site with transmit antennas listed in the carrier summary and with a maximum effective radiated power as specified by Invisible Towers and shown on the worksheet, and that worst-case 100% duty cycle have been assumed; and

That in addition to the emitters specified in the worksheet, there are additional collocated point-to-point microwave facilities on this structure and, the antennas used are highly directional oriented at angles at or just below the horizontal and, that the energy present at ground level is typically so low as to be considered insignificant and have not been included in this analysis; and

That this analysis has been performed with the assumption that the ground immediately surrounding the tower is primarily flat or falling; and

That at this time, the FCC requires that certain licensees address specific levels of radio-frequency energy to which workers or members of the public might possibly be exposed (at §1.1307(b) of the FCC Rules); and

That such consideration of possible exposure of humans to radio-frequency radiation must utilize the standards set by the FCC, which is the Federal Agency having jurisdiction over communications facilities; and

That the FCC rules define two tiers of permissible exposure guidelines: 1) "uncontrolled environments," defined as situations in which persons may not be aware of (the "general public"), or may not be able to control their exposure to a transmission facility; and (2) "controlled environments," which defines situations in which persons are aware of their potential for exposure (industry personnel); and

That this statement specifically addresses the uncontrolled environment (which is more conservative than the controlled environment) and the limit set forth in the FCC rules for

licensees of Invisible Towers' operating frequency as shown on the attached antenna worksheet; and

That when applying the uncontrolled environment standards, the cumulative predicted energy density from the proposed operation is no more than 1.196% of the maximum in any accessible area up to two meters above the ground per OET-65; and

That it is understood per FCC Guidelines and OET65 Appendix A, that regardless of the existent radio-frequency environment, only those licenses whose contributions exceed five percent of the exposure limit pertinent to their operation(s) bear any responsibility for bringing any non-compliant area(s) into compliance; and

That the calculations provided in this report are based on data provided by the client and antenna pattern data supplied by the antenna manufacturer, in accordance with FCC guidelines listed in OET-65. Horizontal and vertical antenna patterns are combined for modeling purposes to accurately reflect the energy two meters above ground level where on-axis energy refers to maximum energy two meters above the ground along the azimuth of the antenna and where area energy refers to the maximum energy anywhere two meters above the ground regardless of the antenna azimuth, accounting for cumulative energy from multiple antennas for the carrier and frequency range indicated; and

That the Occupational Safety and Health Administration has policies in place which address worker safety in and around communications sites, thus individual companies will be responsible for their employees' training regarding Radio Frequency Safety.

In summary, it is stated here that the proposed operation at the site would not result in exposure of the Public to excessive levels of radio-frequency energy as defined in the FCC Rules and Regulations, specifically 47 CFR 1.1307 and that Invisible Towers' proposed operation is completely compliant.

Finally, it is stated that access to the tower should be restricted to communication industry professionals, and approved contractor personnel trained in radio-frequency safety; and that the instant analysis addresses exposure levels at two meters above ground level and does not address exposure levels on the tower, or in the immediate proximity of the antennas.

# Invisible Towers Brandermill Parkway Site Summary

Carrier	Area Maximum Percentage MPE
AT&T	0.044 %
NTELOS	0.004 %
Sprint-Nextel	0.946 %
Sprint-Nextel	0.066 %
T-Mobile	0.049 %
Verizon Wireless	0.086 %
<b>Composite Site MPE:</b>	<b>1.196 %</b>

## AT&T Brandermill Parkway Carrier Summary

**Frequency:** 1930 MHz  
**Maximum Permissible Exposure (MPE):** 1000  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.444  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.0444 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
Powerwave	7770	140	0	585	0.26428	0.026428	0.389677	0.038968
Powerwave	7770	140	120	585	0.26428	0.026428	0.389677	0.038968
Powerwave	7770	140	240	585	0.26428	0.026428	0.389677	0.038968

# NTELOS

## Brandermill Parkway

### Carrier Summary

**Frequency:** 1950 MHz  
**Maximum Permissible Exposure (MPE):** 1000  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.03605  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.00361 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
Jaybeam	PCSA065-10-0	132	0	42	0.011901	0.00119	0.012017	0.001202
Jaybeam	PCSA065-10-0	132	0	42	0.011901	0.00119	0.012017	0.001202
Jaybeam	PCSA065-10-0	132	0	42	0.011901	0.00119	0.012017	0.001202

## Sprint-Nextel Brandermill Parkway Carrier Summary

**Frequency:** 851 MHz  
**Maximum Permissible Exposure (MPE):** 567.33  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 5.36848  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.94627 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
EMS	FV65-12-00DAL2	110	0	1549	1.72393	0.303865	1.789495	0.315422
EMS	FV65-12-00DAL2	110	0	1549	1.72393	0.303865	1.789495	0.315422
EMS	FV65-12-00DAL2	110	0	1549	1.72393	0.303865	1.789495	0.315422

## Sprint-Nextel Brandermill Parkway Carrier Summary

**Frequency:** 1975 MHz  
**Maximum Permissible Exposure (MPE):** 1000  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.65949  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.06595 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
EMS	RV90-17-00DP	110	0	559	0.310619	0.031062	0.466836	0.046684
EMS	RV90-17-00DP	110	120	559	0.310619	0.031062	0.466836	0.046684
EMS	RV90-17-00DP	110	240	559	0.310619	0.031062	0.466836	0.046684

## T-Mobile Brandermill Parkway Carrier Summary

**Frequency:** 1975 MHz  
**Maximum Permissible Exposure (MPE):** 1000  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.49478  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.04948 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
EMS	RV90-17-00DP	126	0	559	0.238643	0.023864	0.350426	0.035043
EMS	RV90-17-00DP	126	120	559	0.238643	0.023864	0.350426	0.035043
EMS	RV90-17-00DP	126	240	559	0.238643	0.023864	0.350426	0.035043

## Verizon Wireless Brandermill Parkway Carrier Summary

**Frequency:** 1950 MHz  
**Maximum Permissible Exposure (MPE):** 1000  $\mu\text{W}/\text{cm}^2$   
**Maximum power density at ground level:** 0.86438  $\mu\text{W}/\text{cm}^2$   
**Highest percentage of Maximum Permissible Exposure:** 0.08644 %

Antenna Make	Model	Height (feet)	Orientation (degrees true)	ERP (Watts)	On Axis		Area	
					Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Max Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE
Antel	BXA-185060-8CF	118	0	894	0.409207	0.040921	0.682619	0.068262
Antel	BXA-185060-8CF	118	120	894	0.409207	0.040921	0.682619	0.068262
Antel	BXA-185060-8CF	118	240	894	0.400931	0.040093	0.682619	0.068262

**AT&T**  
**Brandermill Parkway**  
**Powerwave:7770 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 585      Height (feet): 140      Frequency (MHz): 1930      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-1.50	0.7079	23303.40	23303.36	0.000036	0.000004	27839210
1.0	-0.60	0.8710	2330.46	2330.10	0.003592	0.000359	278420
2.0	0.00	1.0000	1165.41	1164.70	0.014362	0.001436	69626
3.0	0.00	1.0000	777.13	776.07	0.032299	0.003230	30960
4.0	-0.40	0.9120	583.06	581.64	0.057380	0.005738	17427
5.0	-1.50	0.7079	466.66	464.88	0.089574	0.008957	11163
6.0	-3.30	0.4677	389.10	386.97	0.128842	0.012884	7761
7.0	-6.10	0.2455	333.74	331.25	0.175137	0.017514	5709
8.0	-10.40	0.0912	292.24	289.40	0.228402	0.022840	4378
9.0	-18.20	0.0151	259.99	256.79	0.264280	0.026428	3783
10.0	-23.50	0.0045	234.22	230.66	0.256590	0.025659	3897
12.0	-12.70	0.0537	195.62	191.35	0.135775	0.013578	7365
14.0	-13.10	0.0490	168.12	163.13	0.049022	0.004902	20399
16.0	-20.80	0.0083	147.56	141.84	0.063548	0.006355	15736
18.0	-22.70	0.0054	131.62	125.18	0.079858	0.007986	12522
20.0	-16.60	0.0219	118.92	111.75	0.045753	0.004575	21856
22.0	-17.20	0.0191	108.57	100.67	0.048120	0.004812	20781
24.0	-23.40	0.0046	100.00	91.35	0.056639	0.005664	17655
26.0	-34.50	0.0004	92.78	83.39	0.065686	0.006569	15223
28.0	-25.20	0.0030	86.63	76.49	0.040061	0.004006	24962
30.0	-26.20	0.0024	81.34	70.45	0.013767	0.001377	72639
32.0	-36.10	0.0002	76.75	65.09	0.025939	0.002594	38552
34.0	-27.50	0.0018	72.73	60.30	0.048455	0.004845	20637
36.0	-22.30	0.0059	69.20	55.98	0.072308	0.007231	13829
38.0	-19.90	0.0102	66.06	52.06	0.096015	0.009602	10415
40.0	-18.50	0.0141	63.27	48.47	0.108834	0.010883	9188
42.0	-17.60	0.0174	60.78	45.17	0.117430	0.011743	8515
44.0	-17.40	0.0182	58.55	42.12	0.126016	0.012602	7935
46.0	-18.20	0.0151	56.54	39.28	0.134547	0.013455	7432
48.0	-20.30	0.0093	54.73	36.62	0.142798	0.014280	7002
50.0	-24.50	0.0035	53.09	34.13	0.144660	0.014466	6912
52.0	-34.60	0.0003	51.61	31.78	0.109910	0.010991	9098
54.0	-35.10	0.0003	50.27	29.55	0.058763	0.005876	17017
56.0	-27.10	0.0019	49.06	27.43	0.038836	0.003884	25748
58.0	-24.70	0.0034	47.96	25.41	0.040404	0.004040	24749
60.0	-24.30	0.0037	46.96	23.48	0.041841	0.004184	23900
62.0	-25.30	0.0030	46.06	21.63	0.043243	0.004324	23125
64.0	-27.20	0.0019	45.25	19.84	0.044498	0.004450	22473
66.0	-30.40	0.0009	44.52	18.11	0.041958	0.004196	23833
68.0	-35.20	0.0003	43.87	16.43	0.031662	0.003166	31583
70.0	-45.20	0.0000	43.28	14.80	0.018782	0.001878	53241
72.0	-45.30	0.0000	42.77	13.22	0.007847	0.000785	127439
74.0	-39.20	0.0001	42.31	11.66	0.004058	0.000406	246447
76.0	-36.20	0.0002	41.92	10.14	0.004201	0.000420	238033
78.0	-35.80	0.0003	41.58	8.65	0.004245	0.000425	235553
80.0	-36.20	0.0002	41.30	7.17	0.004279	0.000428	233679
82.0	-37.00	0.0002	41.07	5.72	0.004303	0.000430	232388
84.0	-37.5	0.0002	40.9	4.27	0.004322	0.000432	231368
86.0	-37.8	0.0002	40.77	2.84	0.003639	0.000364	274781
88.0	-37.7	0.0002	40.7	1.42	0.003713	0.000371	269317
90.0	-37.6	0.0002	40.67	0	0.003698	0.00037	270403

**AT&T**  
**Brandermill Parkway**  
**Powerwave:7770 Antenna Worksheet (120 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 585      Height (feet): 140      Frequency (MHz): 1930      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.50	0.7079	23303.40	23303.36	0.000036	0.000004	27839210
1.0	-0.60	0.8710	2330.46	2330.10	0.003592	0.000359	278420
2.0	0.00	1.0000	1165.41	1164.70	0.014362	0.001436	69626
3.0	0.00	1.0000	777.13	776.07	0.032299	0.003230	30960
4.0	-0.40	0.9120	583.06	581.64	0.057380	0.005738	17427
5.0	-1.50	0.7079	466.66	464.88	0.089574	0.008957	11163
6.0	-3.30	0.4677	389.10	386.97	0.128842	0.012884	7761
7.0	-6.10	0.2455	333.74	331.25	0.175137	0.017514	5709
8.0	-10.40	0.0912	292.24	289.40	0.228402	0.022840	4378
9.0	-18.20	0.0151	259.99	256.79	0.264280	0.026428	3783
10.0	-23.50	0.0045	234.22	230.66	0.256590	0.025659	3897
12.0	-12.70	0.0537	195.62	191.35	0.135775	0.013578	7365
14.0	-13.10	0.0490	168.12	163.13	0.048959	0.004896	20425
16.0	-20.80	0.0083	147.56	141.84	0.063548	0.006355	15736
18.0	-22.70	0.0054	131.62	125.18	0.079858	0.007986	12522
20.0	-16.60	0.0219	118.92	111.75	0.045753	0.004575	21856
22.0	-17.20	0.0191	108.57	100.67	0.048120	0.004812	20781
24.0	-23.40	0.0046	100.00	91.35	0.056639	0.005664	17655
26.0	-34.50	0.0004	92.78	83.39	0.065686	0.006569	15223
28.0	-25.20	0.0030	86.63	76.49	0.040061	0.004006	24962
30.0	-26.20	0.0024	81.34	70.45	0.013784	0.001378	72547
32.0	-36.10	0.0002	76.75	65.09	0.025972	0.002597	38503
34.0	-27.50	0.0018	72.73	60.30	0.048455	0.004845	20637
36.0	-22.30	0.0059	69.20	55.98	0.072308	0.007231	13829
38.0	-19.90	0.0102	66.06	52.06	0.096260	0.009626	10388
40.0	-18.50	0.0141	63.27	48.47	0.109251	0.010925	9153
42.0	-17.60	0.0174	60.78	45.17	0.117430	0.011743	8515
44.0	-17.40	0.0182	58.55	42.12	0.126499	0.012650	7905
46.0	-18.20	0.0151	56.54	39.28	0.134890	0.013489	7413
48.0	-20.30	0.0093	54.73	36.62	0.142798	0.014280	7002
50.0	-24.50	0.0035	53.09	34.13	0.145214	0.014521	6886
52.0	-34.60	0.0003	51.61	31.78	0.109910	0.010991	9098
54.0	-35.10	0.0003	50.27	29.55	0.058763	0.005876	17017
56.0	-27.10	0.0019	49.06	27.43	0.038836	0.003884	25748
58.0	-24.70	0.0034	47.96	25.41	0.040404	0.004040	24749
60.0	-24.30	0.0037	46.96	23.48	0.042054	0.004205	23778
62.0	-25.30	0.0030	46.06	21.63	0.043243	0.004324	23125
64.0	-27.20	0.0019	45.25	19.84	0.044725	0.004473	22358
66.0	-30.40	0.0009	44.52	18.11	0.042119	0.004212	23742
68.0	-35.20	0.0003	43.87	16.43	0.031662	0.003166	31583
70.0	-45.20	0.0000	43.28	14.80	0.018854	0.001885	53038
72.0	-45.30	0.0000	42.77	13.22	0.007847	0.000785	127439
74.0	-39.20	0.0001	42.31	11.66	0.004078	0.000408	245194
76.0	-36.20	0.0002	41.92	10.14	0.004201	0.000420	238033
78.0	-35.80	0.0003	41.58	8.65	0.004245	0.000425	235553
80.0	-36.20	0.0002	41.30	7.17	0.004290	0.000429	233084
82.0	-37.00	0.0002	41.07	5.72	0.004320	0.000432	231501
84.0	-37.5	0.0002	40.9	4.27	0.004322	0.000432	231368
86.0	-37.8	0.0002	40.77	2.84	0.003653	0.000365	273733
88.0	-37.7	0.0002	40.7	1.42	0.003732	0.000373	267948
90.0	-37.6	0.0002	40.67	0	0.003698	0.00037	270403

**AT&T**  
**Brandermill Parkway**  
**Powerwave:7770 Antenna Worksheet (240 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 585      Height (feet): 140      Frequency (MHz): 1930      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-1.50	0.7079	23303.40	23303.36	0.000036	0.000004	27839210
1.0	-0.60	0.8710	2330.46	2330.10	0.003592	0.000359	278420
2.0	0.00	1.0000	1165.41	1164.70	0.014362	0.001436	69626
3.0	0.00	1.0000	777.13	776.07	0.032299	0.003230	30960
4.0	-0.40	0.9120	583.06	581.64	0.057380	0.005738	17427
5.0	-1.50	0.7079	466.66	464.88	0.089574	0.008957	11163
6.0	-3.30	0.4677	389.10	386.97	0.128842	0.012884	7761
7.0	-6.10	0.2455	333.74	331.25	0.175137	0.017514	5709
8.0	-10.40	0.0912	292.24	289.40	0.228402	0.022840	4378
9.0	-18.20	0.0151	259.99	256.79	0.264280	0.026428	3783
10.0	-23.50	0.0045	234.22	230.66	0.256590	0.025659	3897
12.0	-12.70	0.0537	195.62	191.35	0.135775	0.013578	7365
14.0	-13.10	0.0490	168.12	163.13	0.049022	0.004902	20399
16.0	-20.80	0.0083	147.56	141.84	0.063548	0.006355	15736
18.0	-22.70	0.0054	131.62	125.18	0.079756	0.007976	12538
20.0	-16.60	0.0219	118.92	111.75	0.045753	0.004575	21856
22.0	-17.20	0.0191	108.57	100.67	0.048120	0.004812	20781
24.0	-23.40	0.0046	100.00	91.35	0.056639	0.005664	17655
26.0	-34.50	0.0004	92.78	83.39	0.065686	0.006569	15223
28.0	-25.20	0.0030	86.63	76.49	0.040112	0.004011	24930
30.0	-26.20	0.0024	81.34	70.45	0.013767	0.001377	72639
32.0	-36.10	0.0002	76.75	65.09	0.025939	0.002594	38552
34.0	-27.50	0.0018	72.73	60.30	0.048578	0.004858	20585
36.0	-22.30	0.0059	69.20	55.98	0.072400	0.007240	13812
38.0	-19.90	0.0102	66.06	52.06	0.096015	0.009602	10415
40.0	-18.50	0.0141	63.27	48.47	0.108834	0.010883	9188
42.0	-17.60	0.0174	60.78	45.17	0.117880	0.011788	8483
44.0	-17.40	0.0182	58.55	42.12	0.126016	0.012602	7935
46.0	-18.20	0.0151	56.54	39.28	0.134547	0.013455	7432
48.0	-20.30	0.0093	54.73	36.62	0.143345	0.014334	6976
50.0	-24.50	0.0035	53.09	34.13	0.144660	0.014466	6912
52.0	-34.60	0.0003	51.61	31.78	0.110331	0.011033	9063
54.0	-35.10	0.0003	50.27	29.55	0.058988	0.005899	16952
56.0	-27.10	0.0019	49.06	27.43	0.039035	0.003903	25618
58.0	-24.70	0.0034	47.96	25.41	0.040559	0.004056	24655
60.0	-24.30	0.0037	46.96	23.48	0.041841	0.004184	23900
62.0	-25.30	0.0030	46.06	21.63	0.043409	0.004341	23036
64.0	-27.20	0.0019	45.25	19.84	0.044498	0.004450	22473
66.0	-30.40	0.0009	44.52	18.11	0.041958	0.004196	23833
68.0	-35.20	0.0003	43.87	16.43	0.031784	0.003178	31462
70.0	-45.20	0.0000	43.28	14.80	0.018782	0.001878	53241
72.0	-45.30	0.0000	42.77	13.22	0.007877	0.000788	126953
74.0	-39.20	0.0001	42.31	11.66	0.004058	0.000406	246447
76.0	-36.20	0.0002	41.92	10.14	0.004217	0.000422	237124
78.0	-35.80	0.0003	41.58	8.65	0.004256	0.000426	234953
80.0	-36.20	0.0002	41.30	7.17	0.004279	0.000428	233679
82.0	-37.00	0.0002	41.07	5.72	0.004303	0.000430	232388
84.0	-37.5	0.0002	40.9	4.27	0.004339	0.000434	230486
86.0	-37.8	0.0002	40.77	2.84	0.003639	0.000364	274781
88.0	-37.7	0.0002	40.7	1.42	0.003713	0.000371	269317
90.0	-37.6	0.0002	40.67	0	0.003717	0.000372	269028

**NTELOS**  
**Brandermill Parkway**  
**Jaybeam:PCSA065-10-0 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 42      Height (feet): 132      Frequency (MHz): 1950      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	23303.39	23303.36	0.000003	0.000000	387760331
1.0	-0.10	0.9772	2330.42	2330.10	0.000258	0.000026	3877858
2.0	-0.80	0.8318	1165.32	1164.70	0.001031	0.000103	969656
3.0	-2.10	0.6166	777.01	776.07	0.002320	0.000232	431101
4.0	-4.00	0.3981	582.89	581.64	0.004122	0.000412	242606
5.0	-6.60	0.2188	466.45	464.88	0.006437	0.000644	155361
6.0	-9.50	0.1122	388.85	386.97	0.009134	0.000913	109482
7.0	-12.00	0.0631	333.45	331.25	0.011272	0.001127	88712
8.0	-12.90	0.0513	291.91	289.40	0.011901	0.001190	84023
9.0	-12.40	0.0575	259.62	256.79	0.010850	0.001085	92167
10.0	-11.50	0.0708	233.81	230.66	0.008514	0.000851	117447
12.0	-11.00	0.0794	195.13	191.35	0.004290	0.000429	233082
14.0	-14.20	0.0380	167.55	163.13	0.004759	0.000476	210141
16.0	-22.50	0.0056	146.90	141.84	0.006153	0.000615	162518
18.0	-27.40	0.0018	130.88	125.18	0.007381	0.000738	135478
20.0	-22.10	0.0062	118.11	111.75	0.004717	0.000472	211994
22.0	-23.70	0.0043	107.68	100.67	0.001271	0.000127	787008
24.0	-30.70	0.0009	99.03	91.35	0.001764	0.000176	566798
26.0	-24.10	0.0039	91.74	83.39	0.004822	0.000482	207371
28.0	-16.80	0.0209	85.52	76.49	0.006567	0.000657	152279
30.0	-15.20	0.0302	80.15	70.45	0.007376	0.000738	135567
32.0	-15.80	0.0263	75.49	65.09	0.008145	0.000814	122778
34.0	-18.30	0.0148	71.40	60.30	0.008956	0.000896	111661
36.0	-26.30	0.0023	67.79	55.98	0.009734	0.000973	102734
38.0	-37.20	0.0002	64.59	52.06	0.010076	0.001008	99246
40.0	-30.50	0.0009	61.74	48.47	0.007280	0.000728	137365
42.0	-27.40	0.0018	59.18	45.17	0.002576	0.000258	388178
44.0	-30.30	0.0009	56.88	42.12	0.000921	0.000092	1085383
46.0	-32.40	0.0006	54.81	39.28	0.001060	0.000106	943350
48.0	-28.40	0.0014	52.94	36.62	0.002159	0.000216	463163
50.0	-24.40	0.0036	51.25	34.13	0.003551	0.000355	281612
52.0	-22.30	0.0059	49.71	31.78	0.004537	0.000454	220405
54.0	-21.30	0.0074	48.32	29.55	0.004831	0.000483	207001
56.0	-21.30	0.0074	47.06	27.43	0.005282	0.000528	189309
58.0	-21.10	0.0078	45.91	25.41	0.005547	0.000555	180293
60.0	-22.00	0.0063	44.87	23.48	0.005800	0.000580	172405
62.0	-22.80	0.0052	43.93	21.63	0.006033	0.000603	165761
64.0	-23.10	0.0049	43.07	19.84	0.006249	0.000625	160013
66.0	-24.50	0.0035	42.31	18.11	0.005535	0.000553	180678
68.0	-25.50	0.0028	41.62	16.43	0.004630	0.000463	215960
70.0	-28.00	0.0016	41.00	14.80	0.004399	0.000440	227320
72.0	-31.10	0.0008	40.45	13.22	0.003299	0.000330	303111
74.0	-34.20	0.0004	39.97	11.66	0.002627	0.000263	380608
76.0	-36.50	0.0002	39.56	10.14	0.001485	0.000149	673368
78.0	-36.70	0.0002	39.20	8.65	0.000721	0.000072	1387803
80.0	-36.10	0.0002	38.90	7.17	0.000418	0.000042	2393412
82.0	-35.90	0.0003	38.66	5.72	0.000479	0.000048	2086746
84.0	-33.9	0.0004	38.47	4.27	0.000495	0.000049	2022230
86.0	-33.3	0.0005	38.34	2.84	0.000492	0.000049	2034439
88.0	-34.9	0.0003	38.26	1.42	0.000487	0.000049	2054910
90.0	-38.5	0.0001	38.23	0	0.000483	0.000048	2071891

**NTELOS**  
**Brandermill Parkway**  
**Jaybeam:PCSA065-10-0 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 42      Height (feet): 132      Frequency (MHz): 1950      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	23303.39	23303.36	0.000003	0.000000	387760331
1.0	-0.10	0.9772	2330.42	2330.10	0.000258	0.000026	3877858
2.0	-0.80	0.8318	1165.32	1164.70	0.001031	0.000103	969656
3.0	-2.10	0.6166	777.01	776.07	0.002320	0.000232	431101
4.0	-4.00	0.3981	582.89	581.64	0.004122	0.000412	242606
5.0	-6.60	0.2188	466.45	464.88	0.006437	0.000644	155361
6.0	-9.50	0.1122	388.85	386.97	0.009134	0.000913	109482
7.0	-12.00	0.0631	333.45	331.25	0.011272	0.001127	88712
8.0	-12.90	0.0513	291.91	289.40	0.011901	0.001190	84023
9.0	-12.40	0.0575	259.62	256.79	0.010850	0.001085	92167
10.0	-11.50	0.0708	233.81	230.66	0.008514	0.000851	117447
12.0	-11.00	0.0794	195.13	191.35	0.004290	0.000429	233082
14.0	-14.20	0.0380	167.55	163.13	0.004759	0.000476	210141
16.0	-22.50	0.0056	146.90	141.84	0.006153	0.000615	162518
18.0	-27.40	0.0018	130.88	125.18	0.007381	0.000738	135478
20.0	-22.10	0.0062	118.11	111.75	0.004717	0.000472	211994
22.0	-23.70	0.0043	107.68	100.67	0.001271	0.000127	787008
24.0	-30.70	0.0009	99.03	91.35	0.001764	0.000176	566798
26.0	-24.10	0.0039	91.74	83.39	0.004822	0.000482	207371
28.0	-16.80	0.0209	85.52	76.49	0.006567	0.000657	152279
30.0	-15.20	0.0302	80.15	70.45	0.007376	0.000738	135567
32.0	-15.80	0.0263	75.49	65.09	0.008145	0.000814	122778
34.0	-18.30	0.0148	71.40	60.30	0.008956	0.000896	111661
36.0	-26.30	0.0023	67.79	55.98	0.009734	0.000973	102734
38.0	-37.20	0.0002	64.59	52.06	0.010076	0.001008	99246
40.0	-30.50	0.0009	61.74	48.47	0.007280	0.000728	137365
42.0	-27.40	0.0018	59.18	45.17	0.002576	0.000258	388178
44.0	-30.30	0.0009	56.88	42.12	0.000921	0.000092	1085383
46.0	-32.40	0.0006	54.81	39.28	0.001060	0.000106	943350
48.0	-28.40	0.0014	52.94	36.62	0.002159	0.000216	463163
50.0	-24.40	0.0036	51.25	34.13	0.003551	0.000355	281612
52.0	-22.30	0.0059	49.71	31.78	0.004537	0.000454	220405
54.0	-21.30	0.0074	48.32	29.55	0.004831	0.000483	207001
56.0	-21.30	0.0074	47.06	27.43	0.005282	0.000528	189309
58.0	-21.10	0.0078	45.91	25.41	0.005547	0.000555	180293
60.0	-22.00	0.0063	44.87	23.48	0.005800	0.000580	172405
62.0	-22.80	0.0052	43.93	21.63	0.006033	0.000603	165761
64.0	-23.10	0.0049	43.07	19.84	0.006249	0.000625	160013
66.0	-24.50	0.0035	42.31	18.11	0.005535	0.000553	180678
68.0	-25.50	0.0028	41.62	16.43	0.004630	0.000463	215960
70.0	-28.00	0.0016	41.00	14.80	0.004399	0.000440	227320
72.0	-31.10	0.0008	40.45	13.22	0.003299	0.000330	303111
74.0	-34.20	0.0004	39.97	11.66	0.002627	0.000263	380608
76.0	-36.50	0.0002	39.56	10.14	0.001485	0.000149	673368
78.0	-36.70	0.0002	39.20	8.65	0.000721	0.000072	1387803
80.0	-36.10	0.0002	38.90	7.17	0.000418	0.000042	2393412
82.0	-35.90	0.0003	38.66	5.72	0.000479	0.000048	2086746
84.0	-33.9	0.0004	38.47	4.27	0.000495	0.000049	2022230
86.0	-33.3	0.0005	38.34	2.84	0.000492	0.000049	2034439
88.0	-34.9	0.0003	38.26	1.42	0.000487	0.000049	2054910
90.0	-38.5	0.0001	38.23	0	0.000483	0.000048	2071891

**NTELOS**  
**Brandermill Parkway**  
**Jaybeam:PCSA065-10-0 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 42      Height (feet): 132      Frequency (MHz): 1950      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	23303.39	23303.36	0.000003	0.000000	387760331
1.0	-0.10	0.9772	2330.42	2330.10	0.000258	0.000026	3877858
2.0	-0.80	0.8318	1165.32	1164.70	0.001031	0.000103	969656
3.0	-2.10	0.6166	777.01	776.07	0.002320	0.000232	431101
4.0	-4.00	0.3981	582.89	581.64	0.004122	0.000412	242606
5.0	-6.60	0.2188	466.45	464.88	0.006437	0.000644	155361
6.0	-9.50	0.1122	388.85	386.97	0.009134	0.000913	109482
7.0	-12.00	0.0631	333.45	331.25	0.011272	0.001127	88712
8.0	-12.90	0.0513	291.91	289.40	0.011901	0.001190	84023
9.0	-12.40	0.0575	259.62	256.79	0.010850	0.001085	92167
10.0	-11.50	0.0708	233.81	230.66	0.008514	0.000851	117447
12.0	-11.00	0.0794	195.13	191.35	0.004290	0.000429	233082
14.0	-14.20	0.0380	167.55	163.13	0.004759	0.000476	210141
16.0	-22.50	0.0056	146.90	141.84	0.006153	0.000615	162518
18.0	-27.40	0.0018	130.88	125.18	0.007381	0.000738	135478
20.0	-22.10	0.0062	118.11	111.75	0.004717	0.000472	211994
22.0	-23.70	0.0043	107.68	100.67	0.001271	0.000127	787008
24.0	-30.70	0.0009	99.03	91.35	0.001764	0.000176	566798
26.0	-24.10	0.0039	91.74	83.39	0.004822	0.000482	207371
28.0	-16.80	0.0209	85.52	76.49	0.006567	0.000657	152279
30.0	-15.20	0.0302	80.15	70.45	0.007376	0.000738	135567
32.0	-15.80	0.0263	75.49	65.09	0.008145	0.000814	122778
34.0	-18.30	0.0148	71.40	60.30	0.008956	0.000896	111661
36.0	-26.30	0.0023	67.79	55.98	0.009734	0.000973	102734
38.0	-37.20	0.0002	64.59	52.06	0.010076	0.001008	99246
40.0	-30.50	0.0009	61.74	48.47	0.007280	0.000728	137365
42.0	-27.40	0.0018	59.18	45.17	0.002576	0.000258	388178
44.0	-30.30	0.0009	56.88	42.12	0.000921	0.000092	1085383
46.0	-32.40	0.0006	54.81	39.28	0.001060	0.000106	943350
48.0	-28.40	0.0014	52.94	36.62	0.002159	0.000216	463163
50.0	-24.40	0.0036	51.25	34.13	0.003551	0.000355	281612
52.0	-22.30	0.0059	49.71	31.78	0.004537	0.000454	220405
54.0	-21.30	0.0074	48.32	29.55	0.004831	0.000483	207001
56.0	-21.30	0.0074	47.06	27.43	0.005282	0.000528	189309
58.0	-21.10	0.0078	45.91	25.41	0.005547	0.000555	180293
60.0	-22.00	0.0063	44.87	23.48	0.005800	0.000580	172405
62.0	-22.80	0.0052	43.93	21.63	0.006033	0.000603	165761
64.0	-23.10	0.0049	43.07	19.84	0.006249	0.000625	160013
66.0	-24.50	0.0035	42.31	18.11	0.005535	0.000553	180678
68.0	-25.50	0.0028	41.62	16.43	0.004630	0.000463	215960
70.0	-28.00	0.0016	41.00	14.80	0.004399	0.000440	227320
72.0	-31.10	0.0008	40.45	13.22	0.003299	0.000330	303111
74.0	-34.20	0.0004	39.97	11.66	0.002627	0.000263	380608
76.0	-36.50	0.0002	39.56	10.14	0.001485	0.000149	673368
78.0	-36.70	0.0002	39.20	8.65	0.000721	0.000072	1387803
80.0	-36.10	0.0002	38.90	7.17	0.000418	0.000042	2393412
82.0	-35.90	0.0003	38.66	5.72	0.000479	0.000048	2086746
84.0	-33.9	0.0004	38.47	4.27	0.000495	0.000049	2022230
86.0	-33.3	0.0005	38.34	2.84	0.000492	0.000049	2034439
88.0	-34.9	0.0003	38.26	1.42	0.000487	0.000049	2054910
90.0	-38.5	0.0001	38.23	0	0.000483	0.000048	2071891

**Sprint-Nextel**  
**Brandermill Parkway**  
**EMS:FV65-12-00DAL2 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 567.33

ERP (Watts): 1549      Height (feet): 110      Frequency (MHz): 851      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	0.00	1.0000	23303.38	23303.36	0.000095	0.000017	5964845
1.0	0.00	1.0000	2330.32	2330.10	0.009511	0.001677	59647
2.0	-0.10	0.9772	1165.12	1164.70	0.038048	0.006706	14910
3.0	-0.10	0.9772	776.71	776.07	0.085617	0.015091	6626
4.0	-0.30	0.9333	582.49	581.64	0.151869	0.026769	3735
5.0	-0.60	0.8710	465.95	464.88	0.233129	0.041092	2433
6.0	-0.90	0.8128	388.25	386.97	0.339962	0.059923	1668
7.0	-1.40	0.7244	332.74	331.25	0.466504	0.082227	1216
8.0	-2.00	0.6310	291.11	289.40	0.606623	0.106925	935
9.0	-2.60	0.5495	258.72	256.79	0.755105	0.133097	751
10.0	-3.30	0.4677	232.81	230.66	0.932554	0.164375	608
12.0	-6.00	0.2512	193.93	191.35	1.256932	0.221551	451
14.0	-8.20	0.1514	166.15	163.13	1.543779	0.272111	367
16.0	-12.30	0.0589	145.30	141.84	1.683491	0.296738	336
18.0	-18.90	0.0129	129.09	125.18	1.723930	0.303865	329
20.0	-29.90	0.0010	116.11	111.75	1.585358	0.279440	357
22.0	-20.10	0.0098	105.49	100.67	1.167560	0.205798	485
24.0	-15.80	0.0263	96.64	91.35	0.915311	0.161336	619
26.0	-14.10	0.0389	89.15	83.39	0.512485	0.090332	1107
28.0	-13.80	0.0417	82.74	76.49	0.352272	0.062093	1610
30.0	-14.60	0.0347	77.18	70.45	0.431462	0.076051	1314
32.0	-15.80	0.0263	72.32	65.09	0.490118	0.086390	1157
34.0	-18.90	0.0129	68.04	60.30	0.551713	0.097247	1028
36.0	-22.60	0.0055	64.25	55.98	0.617726	0.108882	918
38.0	-26.50	0.0022	60.86	52.06	0.685714	0.120866	827
40.0	-24.40	0.0036	57.82	48.47	0.753759	0.132860	752
42.0	-21.20	0.0076	55.09	45.17	0.706269	0.124489	803
44.0	-18.60	0.0138	52.61	42.12	0.600566	0.105858	944
46.0	-17.10	0.0195	50.37	39.28	0.358009	0.063104	1584
48.0	-16.70	0.0214	48.32	36.62	0.426359	0.075151	1330
50.0	-16.50	0.0224	46.46	34.13	0.596820	0.105197	950
52.0	-17.00	0.0200	44.76	31.78	0.654350	0.115338	867
54.0	-17.10	0.0195	43.21	29.55	0.728186	0.128352	779
56.0	-18.00	0.0158	41.79	27.43	0.773911	0.136412	733
58.0	-19.20	0.0120	40.50	25.41	0.817216	0.144045	694
60.0	-20.00	0.0100	39.31	23.48	0.861914	0.151924	658
62.0	-20.60	0.0087	38.23	21.63	0.872613	0.153810	650
64.0	-21.40	0.0072	37.25	19.84	0.833136	0.146851	680
66.0	-22.20	0.0060	36.36	18.11	0.780425	0.137560	726
68.0	-22.70	0.0054	35.55	16.43	0.615785	0.108540	921
70.0	-23.00	0.0050	34.83	14.80	0.501448	0.088387	1131
72.0	-24.70	0.0034	34.19	13.22	0.430460	0.075874	1317
74.0	-25.20	0.0030	33.62	11.66	0.383509	0.067599	1479
76.0	-27.00	0.0020	33.12	10.14	0.333796	0.058836	1699
78.0	-28.00	0.0016	32.69	8.65	0.279753	0.049310	2027
80.0	-31.20	0.0008	32.33	7.17	0.195597	0.034476	2900
82.0	-35.30	0.0003	32.04	5.72	0.148590	0.026191	3818
84.0	-40	0.0001	31.82	4.27	0.116082	0.020461	4887
86.0	-40	0.0001	31.66	2.84	0.050757	0.008947	11177
88.0	-40	0.0001	31.56	1.42	0.028769	0.005071	19720
90.0	-35.6	0.0003	31.53	0	0.051084	0.009004	11105

**Sprint-Nextel**  
**Brandermill Parkway**  
**EMS:FV65-12-00DAL2 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 567.33

ERP (Watts): 1549      Height (feet): 110      Frequency (MHz): 851      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	0.00	1.0000	23303.38	23303.36	0.000095	0.000017	5964845
1.0	0.00	1.0000	2330.32	2330.10	0.009511	0.001677	59647
2.0	-0.10	0.9772	1165.12	1164.70	0.038048	0.006706	14910
3.0	-0.10	0.9772	776.71	776.07	0.085617	0.015091	6626
4.0	-0.30	0.9333	582.49	581.64	0.151869	0.026769	3735
5.0	-0.60	0.8710	465.95	464.88	0.233129	0.041092	2433
6.0	-0.90	0.8128	388.25	386.97	0.339962	0.059923	1668
7.0	-1.40	0.7244	332.74	331.25	0.466504	0.082227	1216
8.0	-2.00	0.6310	291.11	289.40	0.606623	0.106925	935
9.0	-2.60	0.5495	258.72	256.79	0.755105	0.133097	751
10.0	-3.30	0.4677	232.81	230.66	0.932554	0.164375	608
12.0	-6.00	0.2512	193.93	191.35	1.256932	0.221551	451
14.0	-8.20	0.1514	166.15	163.13	1.543779	0.272111	367
16.0	-12.30	0.0589	145.30	141.84	1.683491	0.296738	336
18.0	-18.90	0.0129	129.09	125.18	1.723930	0.303865	329
20.0	-29.90	0.0010	116.11	111.75	1.585358	0.279440	357
22.0	-20.10	0.0098	105.49	100.67	1.167560	0.205798	485
24.0	-15.80	0.0263	96.64	91.35	0.915311	0.161336	619
26.0	-14.10	0.0389	89.15	83.39	0.512485	0.090332	1107
28.0	-13.80	0.0417	82.74	76.49	0.352272	0.062093	1610
30.0	-14.60	0.0347	77.18	70.45	0.431462	0.076051	1314
32.0	-15.80	0.0263	72.32	65.09	0.490118	0.086390	1157
34.0	-18.90	0.0129	68.04	60.30	0.551713	0.097247	1028
36.0	-22.60	0.0055	64.25	55.98	0.617726	0.108882	918
38.0	-26.50	0.0022	60.86	52.06	0.685714	0.120866	827
40.0	-24.40	0.0036	57.82	48.47	0.753759	0.132860	752
42.0	-21.20	0.0076	55.09	45.17	0.706269	0.124489	803
44.0	-18.60	0.0138	52.61	42.12	0.600566	0.105858	944
46.0	-17.10	0.0195	50.37	39.28	0.358009	0.063104	1584
48.0	-16.70	0.0214	48.32	36.62	0.426359	0.075151	1330
50.0	-16.50	0.0224	46.46	34.13	0.596820	0.105197	950
52.0	-17.00	0.0200	44.76	31.78	0.654350	0.115338	867
54.0	-17.10	0.0195	43.21	29.55	0.728186	0.128352	779
56.0	-18.00	0.0158	41.79	27.43	0.773911	0.136412	733
58.0	-19.20	0.0120	40.50	25.41	0.817216	0.144045	694
60.0	-20.00	0.0100	39.31	23.48	0.861914	0.151924	658
62.0	-20.60	0.0087	38.23	21.63	0.872613	0.153810	650
64.0	-21.40	0.0072	37.25	19.84	0.833136	0.146851	680
66.0	-22.20	0.0060	36.36	18.11	0.780425	0.137560	726
68.0	-22.70	0.0054	35.55	16.43	0.615785	0.108540	921
70.0	-23.00	0.0050	34.83	14.80	0.501448	0.088387	1131
72.0	-24.70	0.0034	34.19	13.22	0.430460	0.075874	1317
74.0	-25.20	0.0030	33.62	11.66	0.383509	0.067599	1479
76.0	-27.00	0.0020	33.12	10.14	0.333796	0.058836	1699
78.0	-28.00	0.0016	32.69	8.65	0.279753	0.049310	2027
80.0	-31.20	0.0008	32.33	7.17	0.195597	0.034476	2900
82.0	-35.30	0.0003	32.04	5.72	0.148590	0.026191	3818
84.0	-40	0.0001	31.82	4.27	0.116082	0.020461	4887
86.0	-40	0.0001	31.66	2.84	0.050757	0.008947	11177
88.0	-40	0.0001	31.56	1.42	0.028769	0.005071	19720
90.0	-35.6	0.0003	31.53	0	0.051084	0.009004	11105

**Sprint-Nextel**  
**Brandermill Parkway**  
**EMS:FV65-12-00DAL2 Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 567.33

ERP (Watts): 1549      Height (feet): 110      Frequency (MHz): 851      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	0.00	1.0000	23303.38	23303.36	0.000095	0.000017	5964845
1.0	0.00	1.0000	2330.32	2330.10	0.009511	0.001677	59647
2.0	-0.10	0.9772	1165.12	1164.70	0.038048	0.006706	14910
3.0	-0.10	0.9772	776.71	776.07	0.085617	0.015091	6626
4.0	-0.30	0.9333	582.49	581.64	0.151869	0.026769	3735
5.0	-0.60	0.8710	465.95	464.88	0.233129	0.041092	2433
6.0	-0.90	0.8128	388.25	386.97	0.339962	0.059923	1668
7.0	-1.40	0.7244	332.74	331.25	0.466504	0.082227	1216
8.0	-2.00	0.6310	291.11	289.40	0.606623	0.106925	935
9.0	-2.60	0.5495	258.72	256.79	0.755105	0.133097	751
10.0	-3.30	0.4677	232.81	230.66	0.932554	0.164375	608
12.0	-6.00	0.2512	193.93	191.35	1.256932	0.221551	451
14.0	-8.20	0.1514	166.15	163.13	1.543779	0.272111	367
16.0	-12.30	0.0589	145.30	141.84	1.683491	0.296738	336
18.0	-18.90	0.0129	129.09	125.18	1.723930	0.303865	329
20.0	-29.90	0.0010	116.11	111.75	1.585358	0.279440	357
22.0	-20.10	0.0098	105.49	100.67	1.167560	0.205798	485
24.0	-15.80	0.0263	96.64	91.35	0.915311	0.161336	619
26.0	-14.10	0.0389	89.15	83.39	0.512485	0.090332	1107
28.0	-13.80	0.0417	82.74	76.49	0.352272	0.062093	1610
30.0	-14.60	0.0347	77.18	70.45	0.431462	0.076051	1314
32.0	-15.80	0.0263	72.32	65.09	0.490118	0.086390	1157
34.0	-18.90	0.0129	68.04	60.30	0.551713	0.097247	1028
36.0	-22.60	0.0055	64.25	55.98	0.617726	0.108882	918
38.0	-26.50	0.0022	60.86	52.06	0.685714	0.120866	827
40.0	-24.40	0.0036	57.82	48.47	0.753759	0.132860	752
42.0	-21.20	0.0076	55.09	45.17	0.706269	0.124489	803
44.0	-18.60	0.0138	52.61	42.12	0.600566	0.105858	944
46.0	-17.10	0.0195	50.37	39.28	0.358009	0.063104	1584
48.0	-16.70	0.0214	48.32	36.62	0.426359	0.075151	1330
50.0	-16.50	0.0224	46.46	34.13	0.596820	0.105197	950
52.0	-17.00	0.0200	44.76	31.78	0.654350	0.115338	867
54.0	-17.10	0.0195	43.21	29.55	0.728186	0.128352	779
56.0	-18.00	0.0158	41.79	27.43	0.773911	0.136412	733
58.0	-19.20	0.0120	40.50	25.41	0.817216	0.144045	694
60.0	-20.00	0.0100	39.31	23.48	0.861914	0.151924	658
62.0	-20.60	0.0087	38.23	21.63	0.872613	0.153810	650
64.0	-21.40	0.0072	37.25	19.84	0.833136	0.146851	680
66.0	-22.20	0.0060	36.36	18.11	0.780425	0.137560	726
68.0	-22.70	0.0054	35.55	16.43	0.615785	0.108540	921
70.0	-23.00	0.0050	34.83	14.80	0.501448	0.088387	1131
72.0	-24.70	0.0034	34.19	13.22	0.430460	0.075874	1317
74.0	-25.20	0.0030	33.62	11.66	0.383509	0.067599	1479
76.0	-27.00	0.0020	33.12	10.14	0.333796	0.058836	1699
78.0	-28.00	0.0016	32.69	8.65	0.279753	0.049310	2027
80.0	-31.20	0.0008	32.33	7.17	0.195597	0.034476	2900
82.0	-35.30	0.0003	32.04	5.72	0.148590	0.026191	3818
84.0	-40	0.0001	31.82	4.27	0.116082	0.020461	4887
86.0	-40	0.0001	31.66	2.84	0.050757	0.008947	11177
88.0	-40	0.0001	31.56	1.42	0.028769	0.005071	19720
90.0	-35.6	0.0003	31.53	0	0.051084	0.009004	11105

**Sprint-Nextel**  
**Brandermill Parkway**  
**EMS:RV90-17-00DP Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 559      Height (feet): 110      Frequency (MHz): 1975      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.63	0.8650	23303.38	23303.36	0.000034	0.000003	29134027
1.0	0.00	1.0000	2330.32	2330.10	0.003432	0.000343	291334
2.0	0.00	1.0000	1165.12	1164.70	0.013731	0.001373	72829
3.0	-0.60	0.8710	776.71	776.07	0.030897	0.003090	32365
4.0	-1.90	0.6457	582.49	581.64	0.054936	0.005494	18202
5.0	-4.00	0.3981	465.95	464.88	0.085853	0.008585	11647
6.0	-7.20	0.1905	388.25	386.97	0.123655	0.012366	8087
7.0	-12.30	0.0589	332.74	331.25	0.168351	0.016835	5939
8.0	-17.90	0.0162	291.11	289.40	0.219951	0.021995	4546
9.0	-14.90	0.0324	258.72	256.79	0.278466	0.027847	3591
10.0	-11.80	0.0661	232.81	230.66	0.310619	0.031062	3219
12.0	-10.90	0.0813	193.93	191.35	0.279220	0.027922	3581
14.0	-16.00	0.0251	166.15	163.13	0.148044	0.014804	6754
16.0	-27.00	0.0020	145.30	141.84	0.088811	0.008881	11259
18.0	-18.60	0.0138	129.09	125.18	0.112373	0.011237	8898
20.0	-19.80	0.0105	116.11	111.75	0.138881	0.013888	7200
22.0	-32.60	0.0005	105.49	100.67	0.136471	0.013647	7327
24.0	-21.60	0.0069	96.64	91.35	0.060906	0.006091	16418
26.0	-18.60	0.0138	89.15	83.39	0.045255	0.004525	22097
28.0	-21.50	0.0071	82.74	76.49	0.052511	0.005251	19043
30.0	-33.30	0.0005	77.18	70.45	0.059673	0.005967	16758
32.0	-26.70	0.0021	72.32	65.09	0.062893	0.006289	15899
34.0	-23.20	0.0048	68.04	60.30	0.070936	0.007094	14097
36.0	-26.40	0.0023	64.25	55.98	0.079434	0.007943	12589
38.0	-38.20	0.0002	60.86	52.06	0.085330	0.008533	11719
40.0	-26.10	0.0025	57.82	48.47	0.051308	0.005131	19490
42.0	-22.60	0.0055	55.09	45.17	0.039596	0.003960	25255
44.0	-23.30	0.0047	52.61	42.12	0.043333	0.004333	23076
46.0	-28.10	0.0015	50.37	39.28	0.054576	0.005458	18322
48.0	-39.80	0.0001	48.32	36.62	0.059472	0.005947	16814
50.0	-30.40	0.0009	46.46	34.13	0.064089	0.006409	15603
52.0	-28.20	0.0015	44.76	31.78	0.068884	0.006888	14517
54.0	-29.60	0.0011	43.21	29.55	0.073676	0.007368	13572
56.0	-34.10	0.0004	41.79	27.43	0.066216	0.006622	15101
58.0	-40.00	0.0001	40.50	25.41	0.024597	0.002460	40655
60.0	-33.90	0.0004	39.31	23.48	0.025479	0.002548	39248
62.0	-28.90	0.0013	38.23	21.63	0.026815	0.002681	37292
64.0	-27.10	0.0019	37.25	19.84	0.026168	0.002617	38214
66.0	-27.00	0.0020	36.36	18.11	0.037534	0.003753	26642
68.0	-28.00	0.0016	35.55	16.43	0.041266	0.004127	24233
70.0	-29.40	0.0011	34.83	14.80	0.042759	0.004276	23386
72.0	-31.30	0.0007	34.19	13.22	0.044083	0.004408	22684
74.0	-34.20	0.0004	33.62	11.66	0.045275	0.004528	22087
76.0	-38.80	0.0001	33.12	10.14	0.039766	0.003977	25147
78.0	-40.00	0.0001	32.69	8.65	0.028430	0.002843	35173
80.0	-40.00	0.0001	32.33	7.17	0.017190	0.001719	58172
82.0	-40.00	0.0001	32.04	5.72	0.007097	0.000710	140895
84.0	-40	0.0001	31.82	4.27	0.002774	0.000277	360427
86.0	-40	0.0001	31.66	2.84	0.00278	0.000278	359756
88.0	-40	0.0001	31.56	1.42	0.002774	0.000277	360500
90.0	-40	0.0001	31.53	0	0.002757	0.000276	362667

**Sprint-Nextel**  
**Brandermill Parkway**  
**EMS:RV90-17-00DP Antenna Worksheet (120 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 559      Height (feet): 110      Frequency (MHz): 1975      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm²)	Percent of MPE	Times Below MPE
0.1	-0.63	0.8650	23303.38	23303.36	0.000034	0.000003	29134027
1.0	0.00	1.0000	2330.32	2330.10	0.003432	0.000343	291334
2.0	0.00	1.0000	1165.12	1164.70	0.013731	0.001373	72829
3.0	-0.60	0.8710	776.71	776.07	0.030897	0.003090	32365
4.0	-1.90	0.6457	582.49	581.64	0.054936	0.005494	18202
5.0	-4.00	0.3981	465.95	464.88	0.085853	0.008585	11647
6.0	-7.20	0.1905	388.25	386.97	0.123655	0.012366	8087
7.0	-12.30	0.0589	332.74	331.25	0.168351	0.016835	5939
8.0	-17.90	0.0162	291.11	289.40	0.219951	0.021995	4546
9.0	-14.90	0.0324	258.72	256.79	0.278466	0.027847	3591
10.0	-11.80	0.0661	232.81	230.66	0.310619	0.031062	3219
12.0	-10.90	0.0813	193.93	191.35	0.279220	0.027922	3581
14.0	-16.00	0.0251	166.15	163.13	0.148044	0.014804	6754
16.0	-27.00	0.0020	145.30	141.84	0.088811	0.008881	11259
18.0	-18.60	0.0138	129.09	125.18	0.112373	0.011237	8898
20.0	-19.80	0.0105	116.11	111.75	0.138881	0.013888	7200
22.0	-32.60	0.0005	105.49	100.67	0.136538	0.013654	7323
24.0	-21.60	0.0069	96.64	91.35	0.060906	0.006091	16418
26.0	-18.60	0.0138	89.15	83.39	0.045296	0.004530	22077
28.0	-21.50	0.0071	82.74	76.49	0.052511	0.005251	19043
30.0	-33.30	0.0005	77.18	70.45	0.059749	0.005975	16736
32.0	-26.70	0.0021	72.32	65.09	0.062906	0.006291	15896
34.0	-23.20	0.0048	68.04	60.30	0.070936	0.007094	14097
36.0	-26.40	0.0023	64.25	55.98	0.079434	0.007943	12589
38.0	-38.20	0.0002	60.86	52.06	0.085439	0.008544	11704
40.0	-26.10	0.0025	57.82	48.47	0.051311	0.005131	19489
42.0	-22.60	0.0055	55.09	45.17	0.039596	0.003960	25255
44.0	-23.30	0.0047	52.61	42.12	0.043379	0.004338	23052
46.0	-28.10	0.0015	50.37	39.28	0.054646	0.005465	18299
48.0	-39.80	0.0001	48.32	36.62	0.059472	0.005947	16814
50.0	-30.40	0.0009	46.46	34.13	0.064230	0.006423	15569
52.0	-28.20	0.0015	44.76	31.78	0.068884	0.006888	14517
54.0	-29.60	0.0011	43.21	29.55	0.073676	0.007368	13572
56.0	-34.10	0.0004	41.79	27.43	0.066216	0.006622	15101
58.0	-40.00	0.0001	40.50	25.41	0.024597	0.002460	40655
60.0	-33.90	0.0004	39.31	23.48	0.025522	0.002552	39182
62.0	-28.90	0.0013	38.23	21.63	0.026815	0.002681	37292
64.0	-27.10	0.0019	37.25	19.84	0.026201	0.002620	38165
66.0	-27.00	0.0020	36.36	18.11	0.037588	0.003759	26604
68.0	-28.00	0.0016	35.55	16.43	0.041266	0.004127	24233
70.0	-29.40	0.0011	34.83	14.80	0.042813	0.004281	23357
72.0	-31.30	0.0007	34.19	13.22	0.044083	0.004408	22684
74.0	-34.20	0.0004	33.62	11.66	0.045333	0.004533	22058
76.0	-38.80	0.0001	33.12	10.14	0.039766	0.003977	25147
78.0	-40.00	0.0001	32.69	8.65	0.028430	0.002843	35173
80.0	-40.00	0.0001	32.33	7.17	0.017190	0.001719	58172
82.0	-40.00	0.0001	32.04	5.72	0.007097	0.000710	140895
84.0	-40	0.0001	31.82	4.27	0.002774	0.000277	360427
86.0	-40	0.0001	31.66	2.84	0.002783	0.000278	359298
88.0	-40	0.0001	31.56	1.42	0.002776	0.000278	360234
90.0	-40	0.0001	31.53	0	0.002757	0.000276	362666

**Sprint-Nextel**  
**Brandermill Parkway**  
**EMS:RV90-17-00DP Antenna Worksheet (240 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 559      Height (feet): 110      Frequency (MHz): 1975      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm²)	Percent of MPE	Times Below MPE
0.1	-0.63	0.8650	23303.38	23303.36	0.000034	0.000003	29134027
1.0	0.00	1.0000	2330.32	2330.10	0.003432	0.000343	291334
2.0	0.00	1.0000	1165.12	1164.70	0.013731	0.001373	72829
3.0	-0.60	0.8710	776.71	776.07	0.030897	0.003090	32365
4.0	-1.90	0.6457	582.49	581.64	0.054936	0.005494	18202
5.0	-4.00	0.3981	465.95	464.88	0.085853	0.008585	11647
6.0	-7.20	0.1905	388.25	386.97	0.123655	0.012366	8087
7.0	-12.30	0.0589	332.74	331.25	0.168351	0.016835	5939
8.0	-17.90	0.0162	291.11	289.40	0.219951	0.021995	4546
9.0	-14.90	0.0324	258.72	256.79	0.278466	0.027847	3591
10.0	-11.80	0.0661	232.81	230.66	0.310619	0.031062	3219
12.0	-10.90	0.0813	193.93	191.35	0.279220	0.027922	3581
14.0	-16.00	0.0251	166.15	163.13	0.148044	0.014804	6754
16.0	-27.00	0.0020	145.30	141.84	0.088811	0.008881	11259
18.0	-18.60	0.0138	129.09	125.18	0.112373	0.011237	8898
20.0	-19.80	0.0105	116.11	111.75	0.138881	0.013888	7200
22.0	-32.60	0.0005	105.49	100.67	0.136471	0.013647	7327
24.0	-21.60	0.0069	96.64	91.35	0.060980	0.006098	16398
26.0	-18.60	0.0138	89.15	83.39	0.045255	0.004525	22097
28.0	-21.50	0.0071	82.74	76.49	0.052551	0.005255	19029
30.0	-33.30	0.0005	77.18	70.45	0.059673	0.005967	16758
32.0	-26.70	0.0021	72.32	65.09	0.062893	0.006289	15899
34.0	-23.20	0.0048	68.04	60.30	0.070936	0.007094	14097
36.0	-26.40	0.0023	64.25	55.98	0.079496	0.007950	12579
38.0	-38.20	0.0002	60.86	52.06	0.085330	0.008533	11719
40.0	-26.10	0.0025	57.82	48.47	0.051308	0.005131	19490
42.0	-22.60	0.0055	55.09	45.17	0.039646	0.003965	25223
44.0	-23.30	0.0047	52.61	42.12	0.043333	0.004333	23076
46.0	-28.10	0.0015	50.37	39.28	0.054576	0.005458	18322
48.0	-39.80	0.0001	48.32	36.62	0.059513	0.005951	16803
50.0	-30.40	0.0009	46.46	34.13	0.064089	0.006409	15603
52.0	-28.20	0.0015	44.76	31.78	0.068972	0.006897	14498
54.0	-29.60	0.0011	43.21	29.55	0.073770	0.007377	13555
56.0	-34.10	0.0004	41.79	27.43	0.066301	0.006630	15082
58.0	-40.00	0.0001	40.50	25.41	0.024628	0.002463	40603
60.0	-33.90	0.0004	39.31	23.48	0.025479	0.002548	39248
62.0	-28.90	0.0013	38.23	21.63	0.026849	0.002685	37245
64.0	-27.10	0.0019	37.25	19.84	0.026168	0.002617	38214
66.0	-27.00	0.0020	36.36	18.11	0.037534	0.003753	26642
68.0	-28.00	0.0016	35.55	16.43	0.041371	0.004137	24171
70.0	-29.40	0.0011	34.83	14.80	0.042759	0.004276	23386
72.0	-31.30	0.0007	34.19	13.22	0.044139	0.004414	22655
74.0	-34.20	0.0004	33.62	11.66	0.045275	0.004528	22087
76.0	-38.80	0.0001	33.12	10.14	0.039817	0.003982	25115
78.0	-40.00	0.0001	32.69	8.65	0.028467	0.002847	35128
80.0	-40.00	0.0001	32.33	7.17	0.017190	0.001719	58172
82.0	-40.00	0.0001	32.04	5.72	0.007097	0.000710	140895
84.0	-40	0.0001	31.82	4.27	0.002774	0.000277	360427
86.0	-40	0.0001	31.66	2.84	0.00278	0.000278	359756
88.0	-40	0.0001	31.56	1.42	0.002774	0.000277	360500
90.0	-40	0.0001	31.53	0	0.002757	0.000276	362666

**T-Mobile**  
**Brandermill Parkway**  
**EMS:RV90-17-00DP Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 559      Height (feet): 126      Frequency (MHz): 1975      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.63	0.8650	23303.39	23303.36	0.000034	0.000003	29134044
1.0	0.00	1.0000	2330.39	2330.10	0.003432	0.000343	291352
2.0	0.00	1.0000	1165.26	1164.70	0.013727	0.001373	72847
3.0	-0.60	0.8710	776.92	776.07	0.030880	0.003088	32383
4.0	-1.90	0.6457	582.78	581.64	0.054883	0.005488	18220
5.0	-4.00	0.3981	466.31	464.88	0.085722	0.008572	11665
6.0	-7.20	0.1905	388.68	386.97	0.123384	0.012338	8104
7.0	-12.30	0.0589	333.24	331.25	0.167849	0.016785	5957
8.0	-17.90	0.0162	291.68	289.40	0.214309	0.021431	4666
9.0	-14.90	0.0324	259.36	256.79	0.238643	0.023864	4190
10.0	-11.80	0.0661	233.52	230.66	0.228473	0.022847	4376
12.0	-10.90	0.0813	194.78	191.35	0.120920	0.012092	8269
14.0	-16.00	0.0251	167.14	163.13	0.067120	0.006712	14898
16.0	-27.00	0.0020	146.44	141.84	0.087318	0.008732	11452
18.0	-18.60	0.0138	130.36	125.18	0.108631	0.010863	9205
20.0	-19.80	0.0105	117.53	111.75	0.084904	0.008490	11778
22.0	-32.60	0.0005	107.05	100.67	0.033241	0.003324	30082
24.0	-21.60	0.0069	98.34	91.35	0.037175	0.003717	26900
26.0	-18.60	0.0138	90.99	83.39	0.043375	0.004337	23054
28.0	-21.50	0.0071	84.71	76.49	0.045843	0.004584	21813
30.0	-33.30	0.0005	79.30	70.45	0.052235	0.005223	19144
32.0	-26.70	0.0021	74.58	65.09	0.058955	0.005895	16962
34.0	-23.20	0.0048	70.44	60.30	0.064599	0.006460	15480
36.0	-26.40	0.0023	66.78	55.98	0.038549	0.003855	25941
38.0	-38.20	0.0002	63.52	52.06	0.029772	0.002977	33588
40.0	-26.10	0.0025	60.62	48.47	0.032635	0.003263	30642
42.0	-22.60	0.0055	58.01	45.17	0.041226	0.004123	24256
44.0	-23.30	0.0047	55.67	42.12	0.044809	0.004481	22317
46.0	-28.10	0.0015	53.55	39.28	0.048227	0.004823	20735
48.0	-39.80	0.0001	51.64	36.62	0.051761	0.005176	19319
50.0	-30.40	0.0009	49.90	34.13	0.055249	0.005525	18099
52.0	-28.20	0.0015	48.32	31.78	0.050307	0.005031	19877
54.0	-29.60	0.0011	46.89	29.55	0.019249	0.001925	51952
56.0	-34.10	0.0004	45.58	27.43	0.018967	0.001897	52722
58.0	-40.00	0.0001	44.40	25.41	0.019899	0.001990	50253
60.0	-33.90	0.0004	43.32	23.48	0.020485	0.002048	48816
62.0	-28.90	0.0013	42.34	21.63	0.025072	0.002507	39885
64.0	-27.10	0.0019	41.46	19.84	0.030440	0.003044	32851
66.0	-27.00	0.0020	40.66	18.11	0.031476	0.003148	31770
68.0	-28.00	0.0016	39.94	16.43	0.032436	0.003244	30830
70.0	-29.40	0.0011	39.30	14.80	0.033298	0.003330	30031
72.0	-31.30	0.0007	38.73	13.22	0.034004	0.003400	29408
74.0	-34.20	0.0004	38.23	11.66	0.029584	0.002958	33802
76.0	-38.80	0.0001	37.79	10.14	0.022164	0.002216	45117
78.0	-40.00	0.0001	37.42	8.65	0.014586	0.001459	68557
80.0	-40.00	0.0001	37.10	7.17	0.007665	0.000766	130463
82.0	-40.00	0.0001	36.85	5.72	0.002640	0.000264	378731
84.0	-40	0.0001	36.66	4.27	0.002084	0.000208	479911
86.0	-40	0.0001	36.52	2.84	0.002085	0.000209	479576
88.0	-40	0.0001	36.43	1.42	0.00208	0.000208	480845
90.0	-40	0.0001	36.4	0	0.002068	0.000207	483540

**T-Mobile**  
**Brandermill Parkway**  
**EMS:RV90-17-00DP Antenna Worksheet (120 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 559      Height (feet): 126      Frequency (MHz): 1975      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm²)	Percent of MPE	Times Below MPE
0.1	-0.63	0.8650	23303.39	23303.36	0.000034	0.000003	29134044
1.0	0.00	1.0000	2330.39	2330.10	0.003432	0.000343	291352
2.0	0.00	1.0000	1165.26	1164.70	0.013727	0.001373	72847
3.0	-0.60	0.8710	776.92	776.07	0.030880	0.003088	32383
4.0	-1.90	0.6457	582.78	581.64	0.054883	0.005488	18220
5.0	-4.00	0.3981	466.31	464.88	0.085722	0.008572	11665
6.0	-7.20	0.1905	388.68	386.97	0.123384	0.012338	8104
7.0	-12.30	0.0589	333.24	331.25	0.167849	0.016785	5957
8.0	-17.90	0.0162	291.68	289.40	0.214309	0.021431	4666
9.0	-14.90	0.0324	259.36	256.79	0.238643	0.023864	4190
10.0	-11.80	0.0661	233.52	230.66	0.228473	0.022847	4376
12.0	-10.90	0.0813	194.78	191.35	0.120920	0.012092	8269
14.0	-16.00	0.0251	167.14	163.13	0.067120	0.006712	14898
16.0	-27.00	0.0020	146.44	141.84	0.087318	0.008732	11452
18.0	-18.60	0.0138	130.36	125.18	0.108631	0.010863	9205
20.0	-19.80	0.0105	117.53	111.75	0.084904	0.008490	11778
22.0	-32.60	0.0005	107.05	100.67	0.033246	0.003325	30078
24.0	-21.60	0.0069	98.34	91.35	0.037175	0.003717	26900
26.0	-18.60	0.0138	90.99	83.39	0.043407	0.004341	23037
28.0	-21.50	0.0071	84.71	76.49	0.045843	0.004584	21813
30.0	-33.30	0.0005	79.30	70.45	0.052235	0.005223	19144
32.0	-26.70	0.0021	74.58	65.09	0.059014	0.005901	16945
34.0	-23.20	0.0048	70.44	60.30	0.064599	0.006460	15480
36.0	-26.40	0.0023	66.78	55.98	0.038549	0.003855	25941
38.0	-38.20	0.0002	63.52	52.06	0.029810	0.002981	33545
40.0	-26.10	0.0025	60.62	48.47	0.032672	0.003267	30606
42.0	-22.60	0.0055	58.01	45.17	0.041226	0.004123	24256
44.0	-23.30	0.0047	55.67	42.12	0.044827	0.004483	22308
46.0	-28.10	0.0015	53.55	39.28	0.048339	0.004834	20687
48.0	-39.80	0.0001	51.64	36.62	0.051761	0.005176	19319
50.0	-30.40	0.0009	49.90	34.13	0.055319	0.005532	18076
52.0	-28.20	0.0015	48.32	31.78	0.050307	0.005031	19877
54.0	-29.60	0.0011	46.89	29.55	0.019249	0.001925	51952
56.0	-34.10	0.0004	45.58	27.43	0.018967	0.001897	52722
58.0	-40.00	0.0001	44.40	25.41	0.019899	0.001990	50253
60.0	-33.90	0.0004	43.32	23.48	0.020511	0.002051	48754
62.0	-28.90	0.0013	42.34	21.63	0.025072	0.002507	39885
64.0	-27.10	0.0019	41.46	19.84	0.030518	0.003052	32767
66.0	-27.00	0.0020	40.66	18.11	0.031534	0.003153	31711
68.0	-28.00	0.0016	39.94	16.43	0.032436	0.003244	30830
70.0	-29.40	0.0011	39.30	14.80	0.033341	0.003334	29993
72.0	-31.30	0.0007	38.73	13.22	0.034004	0.003400	29408
74.0	-34.20	0.0004	38.23	11.66	0.029622	0.002962	33759
76.0	-38.80	0.0001	37.79	10.14	0.022164	0.002216	45117
78.0	-40.00	0.0001	37.42	8.65	0.014586	0.001459	68557
80.0	-40.00	0.0001	37.10	7.17	0.007665	0.000766	130463
82.0	-40.00	0.0001	36.85	5.72	0.002640	0.000264	378731
84.0	-40	0.0001	36.66	4.27	0.002084	0.000208	479911
86.0	-40	0.0001	36.52	2.84	0.002086	0.000209	479291
88.0	-40	0.0001	36.43	1.42	0.00208	0.000208	480701
90.0	-40	0.0001	36.4	0	0.002068	0.000207	483539

**T-Mobile**  
**Brandermill Parkway**  
**EMS:RV90-17-00DP Antenna Worksheet (240 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 559      Height (feet): 126      Frequency (MHz): 1975      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (µW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.63	0.8650	23303.39	23303.36	0.000034	0.000003	29134044
1.0	0.00	1.0000	2330.39	2330.10	0.003432	0.000343	291352
2.0	0.00	1.0000	1165.26	1164.70	0.013727	0.001373	72847
3.0	-0.60	0.8710	776.92	776.07	0.030880	0.003088	32383
4.0	-1.90	0.6457	582.78	581.64	0.054883	0.005488	18220
5.0	-4.00	0.3981	466.31	464.88	0.085722	0.008572	11665
6.0	-7.20	0.1905	388.68	386.97	0.123384	0.012338	8104
7.0	-12.30	0.0589	333.24	331.25	0.167849	0.016785	5957
8.0	-17.90	0.0162	291.68	289.40	0.214309	0.021431	4666
9.0	-14.90	0.0324	259.36	256.79	0.238643	0.023864	4190
10.0	-11.80	0.0661	233.52	230.66	0.228473	0.022847	4376
12.0	-10.90	0.0813	194.78	191.35	0.120920	0.012092	8269
14.0	-16.00	0.0251	167.14	163.13	0.067120	0.006712	14898
16.0	-27.00	0.0020	146.44	141.84	0.087318	0.008732	11452
18.0	-18.60	0.0138	130.36	125.18	0.108631	0.010863	9205
20.0	-19.80	0.0105	117.53	111.75	0.085012	0.008501	11763
22.0	-32.60	0.0005	107.05	100.67	0.033241	0.003324	30082
24.0	-21.60	0.0069	98.34	91.35	0.037222	0.003722	26865
26.0	-18.60	0.0138	90.99	83.39	0.043375	0.004337	23054
28.0	-21.50	0.0071	84.71	76.49	0.045875	0.004588	21798
30.0	-33.30	0.0005	79.30	70.45	0.052235	0.005223	19144
32.0	-26.70	0.0021	74.58	65.09	0.058955	0.005896	16962
34.0	-23.20	0.0048	70.44	60.30	0.064681	0.006468	15460
36.0	-26.40	0.0023	66.78	55.98	0.038551	0.003855	25939
38.0	-38.20	0.0002	63.52	52.06	0.029772	0.002977	33588
40.0	-26.10	0.0025	60.62	48.47	0.032635	0.003263	30642
42.0	-22.60	0.0055	58.01	45.17	0.041278	0.004128	24225
44.0	-23.30	0.0047	55.67	42.12	0.044809	0.004481	22317
46.0	-28.10	0.0015	53.55	39.28	0.048227	0.004823	20735
48.0	-39.80	0.0001	51.64	36.62	0.051827	0.005183	19295
50.0	-30.40	0.0009	49.90	34.13	0.055249	0.005525	18099
52.0	-28.20	0.0015	48.32	31.78	0.050372	0.005037	19852
54.0	-29.60	0.0011	46.89	29.55	0.019273	0.001927	51885
56.0	-34.10	0.0004	45.58	27.43	0.018992	0.001899	52655
58.0	-40.00	0.0001	44.40	25.41	0.019925	0.001992	50189
60.0	-33.90	0.0004	43.32	23.48	0.020485	0.002048	48816
62.0	-28.90	0.0013	42.34	21.63	0.025104	0.002510	39834
64.0	-27.10	0.0019	41.46	19.84	0.030440	0.003044	32851
66.0	-27.00	0.0020	40.66	18.11	0.031476	0.003148	31770
68.0	-28.00	0.0016	39.94	16.43	0.032477	0.003248	30790
70.0	-29.40	0.0011	39.30	14.80	0.033298	0.003330	30031
72.0	-31.30	0.0007	38.73	13.22	0.034047	0.003405	29371
74.0	-34.20	0.0004	38.23	11.66	0.029584	0.002958	33802
76.0	-38.80	0.0001	37.79	10.14	0.022193	0.002219	45059
78.0	-40.00	0.0001	37.42	8.65	0.014593	0.001459	68526
80.0	-40.00	0.0001	37.10	7.17	0.007665	0.000766	130463
82.0	-40.00	0.0001	36.85	5.72	0.002640	0.000264	378731
84.0	-40	0.0001	36.66	4.27	0.002085	0.000208	479726
86.0	-40	0.0001	36.52	2.84	0.002085	0.000209	479576
88.0	-40	0.0001	36.43	1.42	0.00208	0.000208	480845
90.0	-40	0.0001	36.4	0	0.002068	0.000207	483539

**Verizon Wireless**  
**Brandermill Parkway**  
**Antel:BXA-185060-8CF Antenna Worksheet (0 Sector)**

Maximum Permissible Exposure (MPE): 1000

ERP (Watts): 894      Height (feet): 118      Frequency (MHz): 1950      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	23303.39	23303.36	0.000055	0.000005	18216918
1.0	-0.10	0.9772	2330.35	2330.10	0.005489	0.000549	182170
2.0	-0.30	0.9333	1165.19	1164.70	0.021957	0.002196	45544
3.0	-0.70	0.8511	776.81	776.07	0.049400	0.004940	20242
4.0	-2.90	0.5129	582.63	581.64	0.086444	0.008644	11568
5.0	-4.80	0.3311	466.12	464.88	0.132111	0.013211	7569
6.0	-7.30	0.1862	388.46	386.97	0.197480	0.019748	5063
7.0	-10.70	0.0851	332.98	331.25	0.263921	0.026392	3789
8.0	-12.80	0.0525	291.38	289.40	0.333397	0.033340	2999
9.0	-41.00	0.0001	259.03	256.79	0.397471	0.039747	2515
10.0	-22.00	0.0063	233.15	230.66	0.393730	0.039373	2539
12.0	-16.00	0.0251	194.34	191.35	0.268869	0.026887	3719
14.0	-15.80	0.0263	166.63	163.13	0.125765	0.012576	7951
16.0	-18.70	0.0135	145.85	141.84	0.069202	0.006920	14450
18.0	-30.20	0.0010	129.70	125.18	0.066950	0.006695	14936
20.0	-29.50	0.0011	116.79	111.75	0.082456	0.008246	12127
22.0	-30.40	0.0009	106.24	100.67	0.090251	0.009025	11080
24.0	-43.30	0.0000	97.46	91.35	0.063262	0.006326	15807
26.0	-23.60	0.0044	90.04	83.39	0.024128	0.002413	41445
28.0	-18.80	0.0132	83.70	76.49	0.069731	0.006973	14340
30.0	-17.40	0.0182	78.21	70.45	0.108597	0.010860	9208
32.0	-16.80	0.0209	73.42	65.09	0.140983	0.014098	7093
34.0	-16.60	0.0219	69.21	60.30	0.166755	0.016675	5996
36.0	-16.80	0.0209	65.48	55.98	0.185571	0.018557	5388
38.0	-17.60	0.0174	62.16	52.06	0.205121	0.020512	4875
40.0	-19.10	0.0123	59.19	48.47	0.225340	0.022534	4437
42.0	-22.20	0.0060	56.52	45.17	0.246135	0.024613	4062
44.0	-23.60	0.0044	54.11	42.12	0.267098	0.026710	3743
46.0	-22.30	0.0059	51.93	39.28	0.276219	0.027622	3620
48.0	-19.30	0.0117	49.95	36.62	0.252919	0.025292	3953
50.0	-18.00	0.0158	48.15	34.13	0.220537	0.022054	4534
52.0	-17.30	0.0186	46.51	31.78	0.293892	0.029389	3402
54.0	-17.30	0.0186	45.02	29.55	0.336169	0.033617	2974
56.0	-18.10	0.0155	43.66	27.43	0.355244	0.035524	2814
58.0	-20.10	0.0098	42.42	25.41	0.374086	0.037409	2673
60.0	-22.10	0.0062	41.29	23.48	0.391966	0.039197	2551
62.0	-25.30	0.0030	40.27	21.63	0.409207	0.040921	2443
64.0	-28.40	0.0014	39.33	19.84	0.382560	0.038256	2613
66.0	-29.60	0.0011	38.49	18.11	0.320300	0.032030	3122
68.0	-28.20	0.0015	37.73	16.43	0.186658	0.018666	5357
70.0	-27.50	0.0018	37.05	14.80	0.093120	0.009312	10738
72.0	-25.10	0.0031	36.45	13.22	0.085664	0.008566	11673
74.0	-24.20	0.0038	35.91	11.66	0.145241	0.014524	6885
76.0	-22.80	0.0052	35.45	10.14	0.157375	0.015738	6354
78.0	-22.10	0.0062	35.05	8.65	0.194166	0.019417	5150
80.0	-21.60	0.0069	34.72	7.17	0.200800	0.020080	4980
82.0	-21.40	0.0072	34.44	5.72	0.201358	0.020136	4966
84.0	-21.8	0.0066	34.23	4.27	0.20237	0.020237	4941
86.0	-23.3	0.0047	34.09	2.84	0.201634	0.020163	4959
88.0	-25.1	0.0031	34	1.42	0.190091	0.019009	5260
90.0	-27.4	0.0018	33.97	0	0.170633	0.017063	5860

**Verizon Wireless**  
**Brandermill Parkway**  
**Antel:BXA-185060-8CF Antenna Worksheet (120 Sector)**

Maximum Permissible Exposure (MPE): 1000  
ERP (Watts): 894      Height (feet): 118      Frequency (MHz): 1950      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density ( $\mu\text{W}/\text{cm}^2$ )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	23303.39	23303.36	0.000055	0.000005	18216918
1.0	-0.10	0.9772	2330.35	2330.10	0.005489	0.000549	182170
2.0	-0.30	0.9333	1165.19	1164.70	0.021957	0.002196	45544
3.0	-0.70	0.8511	776.81	776.07	0.049400	0.004940	20242
4.0	-2.90	0.5129	582.63	581.64	0.086444	0.008644	11568
5.0	-4.80	0.3311	466.12	464.88	0.137202	0.013720	7288
6.0	-7.30	0.1862	388.46	386.97	0.197480	0.019748	5063
7.0	-10.70	0.0851	332.98	331.25	0.263346	0.026335	3797
8.0	-12.80	0.0525	291.38	289.40	0.333397	0.033340	2999
9.0	-41.00	0.0001	259.03	256.79	0.396459	0.039646	2522
10.0	-22.00	0.0063	233.15	230.66	0.393730	0.039373	2539
12.0	-16.00	0.0251	194.34	191.35	0.268184	0.026818	3728
14.0	-15.80	0.0263	166.63	163.13	0.125323	0.012532	7979
16.0	-18.70	0.0135	145.85	141.84	0.069202	0.006920	14450
18.0	-30.20	0.0010	129.70	125.18	0.066950	0.006695	14936
20.0	-29.50	0.0011	116.79	111.75	0.082456	0.008246	12127
22.0	-30.40	0.0009	106.24	100.67	0.089792	0.008979	11136
24.0	-43.30	0.0000	97.46	91.35	0.063262	0.006326	15807
26.0	-23.60	0.0044	90.04	83.39	0.023980	0.002398	41701
28.0	-18.80	0.0132	83.70	76.49	0.069731	0.006973	14340
30.0	-17.40	0.0182	78.21	70.45	0.107907	0.010791	9267
32.0	-16.80	0.0209	73.42	65.09	0.139909	0.013991	7147
34.0	-16.60	0.0219	69.21	60.30	0.166755	0.016675	5996
36.0	-16.80	0.0209	65.48	55.98	0.185571	0.018557	5388
38.0	-17.60	0.0174	62.16	52.06	0.203299	0.020330	4918
40.0	-19.10	0.0123	59.19	48.47	0.222771	0.022277	4488
42.0	-22.20	0.0060	56.52	45.17	0.246135	0.024613	4062
44.0	-23.60	0.0044	54.11	42.12	0.264052	0.026405	3787
46.0	-22.30	0.0059	51.93	39.28	0.273018	0.027302	3662
48.0	-19.30	0.0117	49.95	36.62	0.252919	0.025292	3953
50.0	-18.00	0.0158	48.15	34.13	0.217190	0.021719	4604
52.0	-17.30	0.0186	46.51	31.78	0.293892	0.029389	3402
54.0	-17.30	0.0186	45.02	29.55	0.336169	0.033617	2974
56.0	-18.10	0.0155	43.66	27.43	0.355244	0.035524	2814
58.0	-20.10	0.0098	42.42	25.41	0.374086	0.037409	2673
60.0	-22.10	0.0062	41.29	23.48	0.384699	0.038470	2599
62.0	-25.30	0.0030	40.27	21.63	0.409207	0.040921	2443
64.0	-28.40	0.0014	39.33	19.84	0.374634	0.037463	2669
66.0	-29.60	0.0011	38.49	18.11	0.313087	0.031309	3193
68.0	-28.20	0.0015	37.73	16.43	0.186658	0.018666	5357
70.0	-27.50	0.0018	37.05	14.80	0.090945	0.009095	10995
72.0	-25.10	0.0031	36.45	13.22	0.085664	0.008566	11673
74.0	-24.20	0.0038	35.91	11.66	0.141595	0.014160	7062
76.0	-22.80	0.0052	35.45	10.14	0.157375	0.015738	6354
78.0	-22.10	0.0062	35.05	8.65	0.194166	0.019417	5150
80.0	-21.60	0.0069	34.72	7.17	0.194980	0.019498	5128
82.0	-21.40	0.0072	34.44	5.72	0.196067	0.019607	5100
84.0	-21.8	0.0066	34.23	4.27	0.20237	0.020237	4941
86.0	-23.3	0.0047	34.09	2.84	0.19581	0.019581	5106
88.0	-25.1	0.0031	34	1.42	0.184366	0.018437	5424
90.0	-27.4	0.0018	33.97	0	0.170528	0.017053	5864

**Verizon Wireless**  
**Brandermill Parkway**  
**Antel:BXA-185060-8CF Antenna Worksheet (240 Sector)**

Maximum Permissible Exposure (MPE):

1000

ERP (Watts): 894      Height (feet): 118      Frequency (MHz): 1950      Downtilt (Degrees): 0.0

Depression Angle (degrees)	Relative dB	Relative Gain	Slant Distance (meters)	Dist From Structure (meters)	Power Density (μW/cm <sup>2</sup> )	Percent of MPE	Times Below MPE
0.1	-0.01	0.9977	23303.39	23303.36	0.000055	0.000005	18216918
1.0	-0.10	0.9772	2330.35	2330.10	0.005489	0.000549	182170
2.0	-0.30	0.9333	1165.19	1164.70	0.021957	0.002196	45544
3.0	-0.70	0.8511	776.81	776.07	0.049400	0.004940	20242
4.0	-2.90	0.5129	582.63	581.64	0.087817	0.008782	11387
5.0	-4.80	0.3311	466.12	464.88	0.132111	0.013211	7569
6.0	-7.30	0.1862	388.46	386.97	0.197472	0.019747	5064
7.0	-10.70	0.0851	332.98	331.25	0.263921	0.026392	3789
8.0	-12.80	0.0525	291.38	289.40	0.332548	0.033255	3007
9.0	-41.00	0.0001	259.03	256.79	0.397471	0.039747	2515
10.0	-22.00	0.0063	233.15	230.66	0.392539	0.039254	2547
12.0	-16.00	0.0251	194.34	191.35	0.268869	0.026887	3719
14.0	-15.80	0.0263	166.63	163.13	0.125765	0.012577	7951
16.0	-18.70	0.0135	145.85	141.84	0.068891	0.006889	14515
18.0	-30.20	0.0010	129.70	125.18	0.066679	0.006668	14997
20.0	-29.50	0.0011	116.79	111.75	0.082131	0.008213	12175
22.0	-30.40	0.0009	106.24	100.67	0.090251	0.009025	11080
24.0	-43.30	0.0000	97.46	91.35	0.062892	0.006289	15900
26.0	-23.60	0.0044	90.04	83.39	0.024128	0.002413	41445
28.0	-18.80	0.0132	83.70	76.49	0.069293	0.006929	14431
30.0	-17.40	0.0182	78.21	70.45	0.108597	0.010860	9208
32.0	-16.80	0.0209	73.42	65.09	0.140983	0.014098	7093
34.0	-16.60	0.0219	69.21	60.30	0.165402	0.016540	6045
36.0	-16.80	0.0209	65.48	55.98	0.183923	0.018392	5437
38.0	-17.60	0.0174	62.16	52.06	0.205121	0.020512	4875
40.0	-19.10	0.0123	59.19	48.47	0.225340	0.022534	4437
42.0	-22.20	0.0060	56.52	45.17	0.243036	0.024304	4114
44.0	-23.60	0.0044	54.11	42.12	0.267098	0.026710	3743
46.0	-22.30	0.0059	51.93	39.28	0.276219	0.027622	3620
48.0	-19.30	0.0117	49.95	36.62	0.249667	0.024967	4005
50.0	-18.00	0.0158	48.15	34.13	0.220537	0.022054	4534
52.0	-17.30	0.0186	46.51	31.78	0.289131	0.028913	3458
54.0	-17.30	0.0186	45.02	29.55	0.330665	0.033066	3024
56.0	-18.10	0.0155	43.66	27.43	0.349407	0.034941	2861
58.0	-20.10	0.0098	42.42	25.41	0.367003	0.036700	2724
60.0	-22.10	0.0062	41.29	23.48	0.391966	0.039197	2551
62.0	-25.30	0.0030	40.27	21.63	0.400931	0.040093	2494
64.0	-28.40	0.0014	39.33	19.84	0.382560	0.038256	2613
66.0	-29.60	0.0011	38.49	18.11	0.320300	0.032030	3122
68.0	-28.20	0.0015	37.73	16.43	0.182425	0.018242	5481
70.0	-27.50	0.0018	37.05	14.80	0.093120	0.009312	10738
72.0	-25.10	0.0031	36.45	13.22	0.083666	0.008367	11952
74.0	-24.20	0.0038	35.91	11.66	0.145241	0.014524	6885
76.0	-22.80	0.0052	35.45	10.14	0.153367	0.015337	6520
78.0	-22.10	0.0062	35.05	8.65	0.189319	0.018932	5282
80.0	-21.60	0.0069	34.72	7.17	0.200800	0.020080	4980
82.0	-21.40	0.0072	34.44	5.72	0.201358	0.020136	4966
84.0	-21.8	0.0066	34.23	4.27	0.196361	0.019636	5092
86.0	-23.3	0.0047	34.09	2.84	0.201634	0.020163	4959
88.0	-25.1	0.0031	34	1.42	0.190091	0.019009	5260
90.0	-27.4	0.0018	33.97	0	0.165377	0.016538	6046