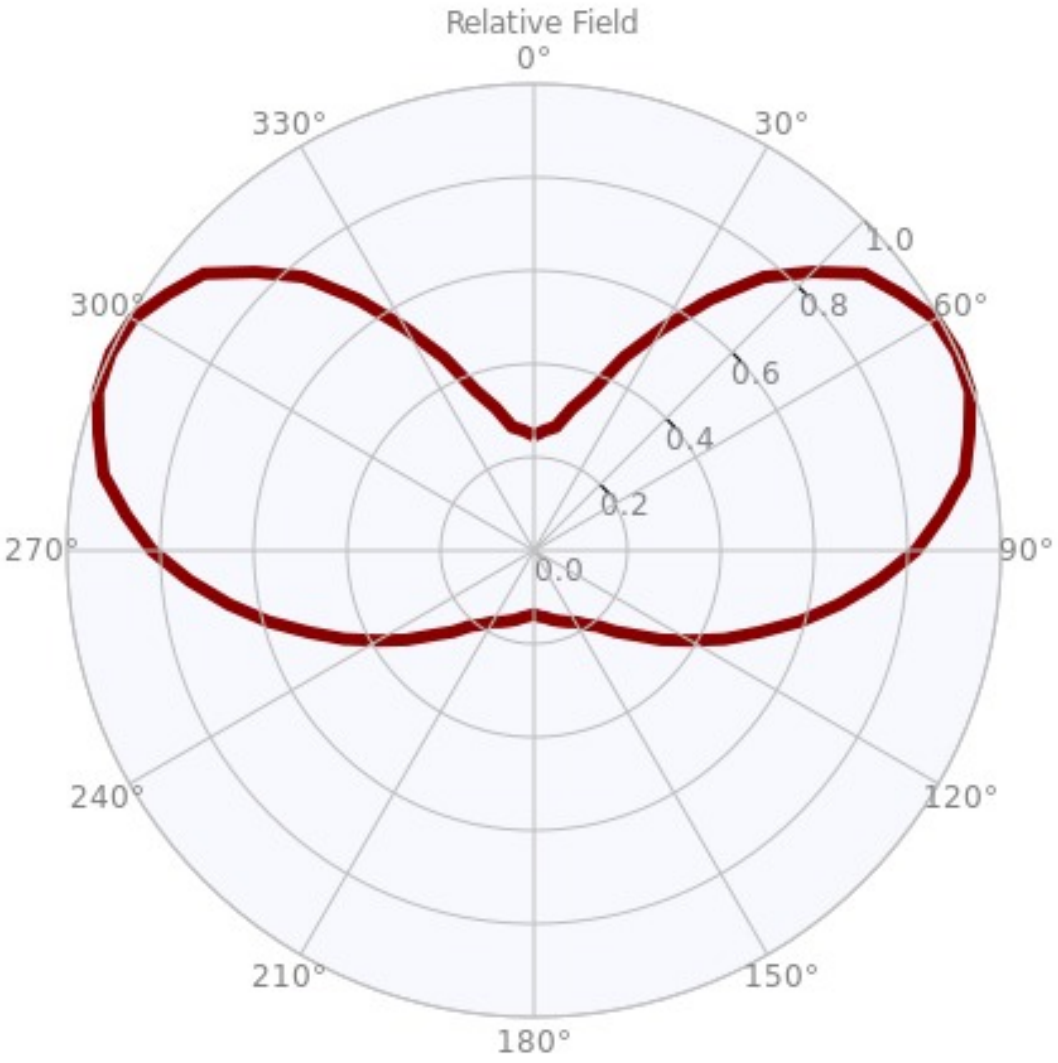
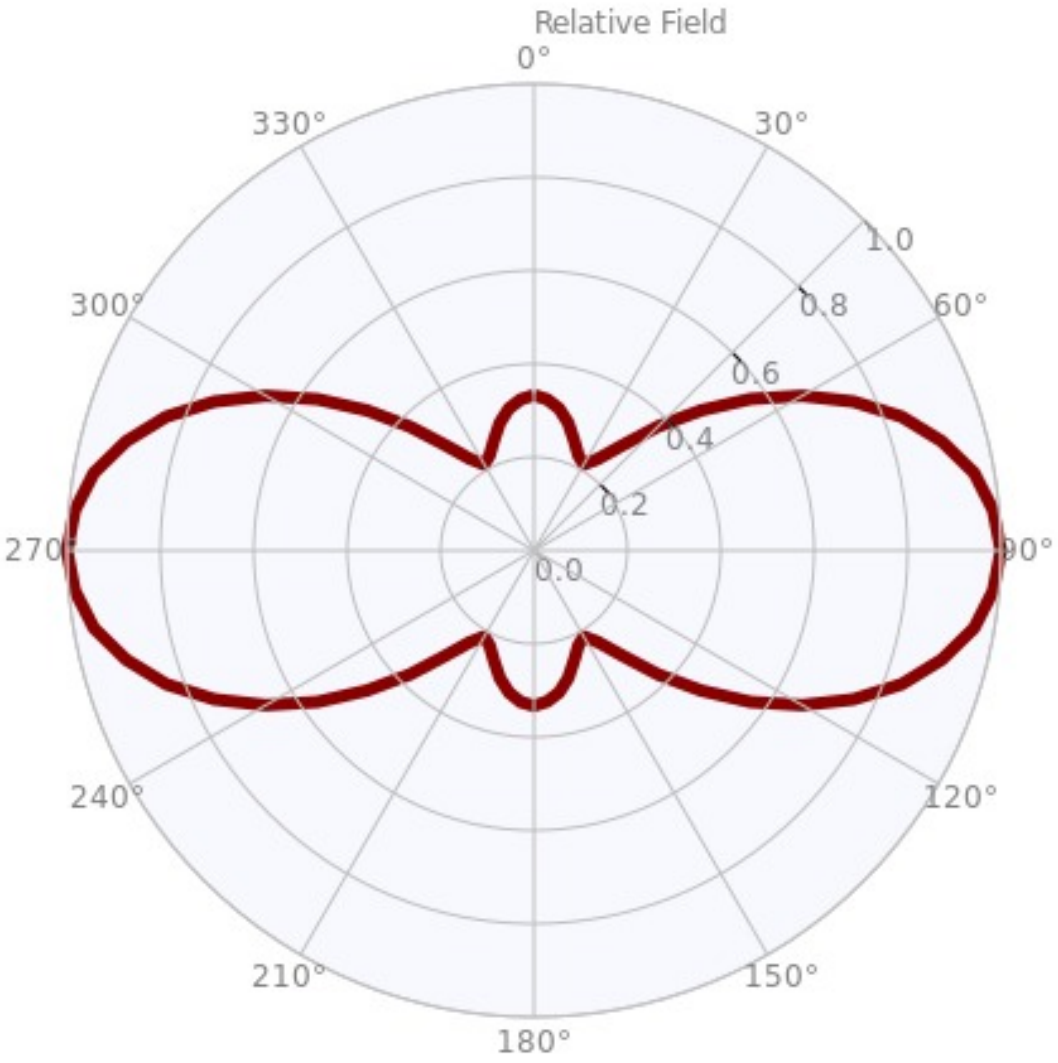
Summary

Antenna Specifications	
Antenna Type	Coaxial Slot
Antenna Model	ATC-BCE414BR-VP1-20
Electrical Specifications	
Channel(s)	20
Frequency Range (MHz)	506 - 512
Polarization	Elliptical
Horizontal Azimuth Pattern	BR
Directivity	2.75
dB	4.39
Vertical Azimuth Pattern	VP1- Peanut
Directivity	2.90
dB	4.62
Vertical Component	30 %
Azimuth Peak of Beam	0 °
Elevation Pattern	14
Directivity	14.00
dB	11.46
Electrical Beam Tilt	1.00 °
Antenna Peak Power Gain	
Horizontal Gain Power	29.62
Horizontal Gain Ratio	14.72 dBd
Vertical Gain Power	8.88
Vertical Gain Ratio	9.49 dBd
Line Type	1-5/8" 50 Ohm Foam Flex Line
Line Length	225 ft
Total Line Loss	1.15 dB
Effective Radiated Power (ERP)	50 kW
ERP Vertical Power	15.00 kW
Transmitter Power Output (TPO)	
TPO Power	2.20 kW
TPO Ratio	3.43 dBk
Input Type	EIA 1-5/8"
Mechanical Specifications	
Mount Type	Top Mount
Length of Antenna	30.43 ft
Center of Radiation	15.21 ft
Radome Diameter	TBD
Color	Aviation Orange
Calculated Weight	Contact Alive Telelcom 1 2
Windload (Shear)	Contact Alive Telelcom 1 2

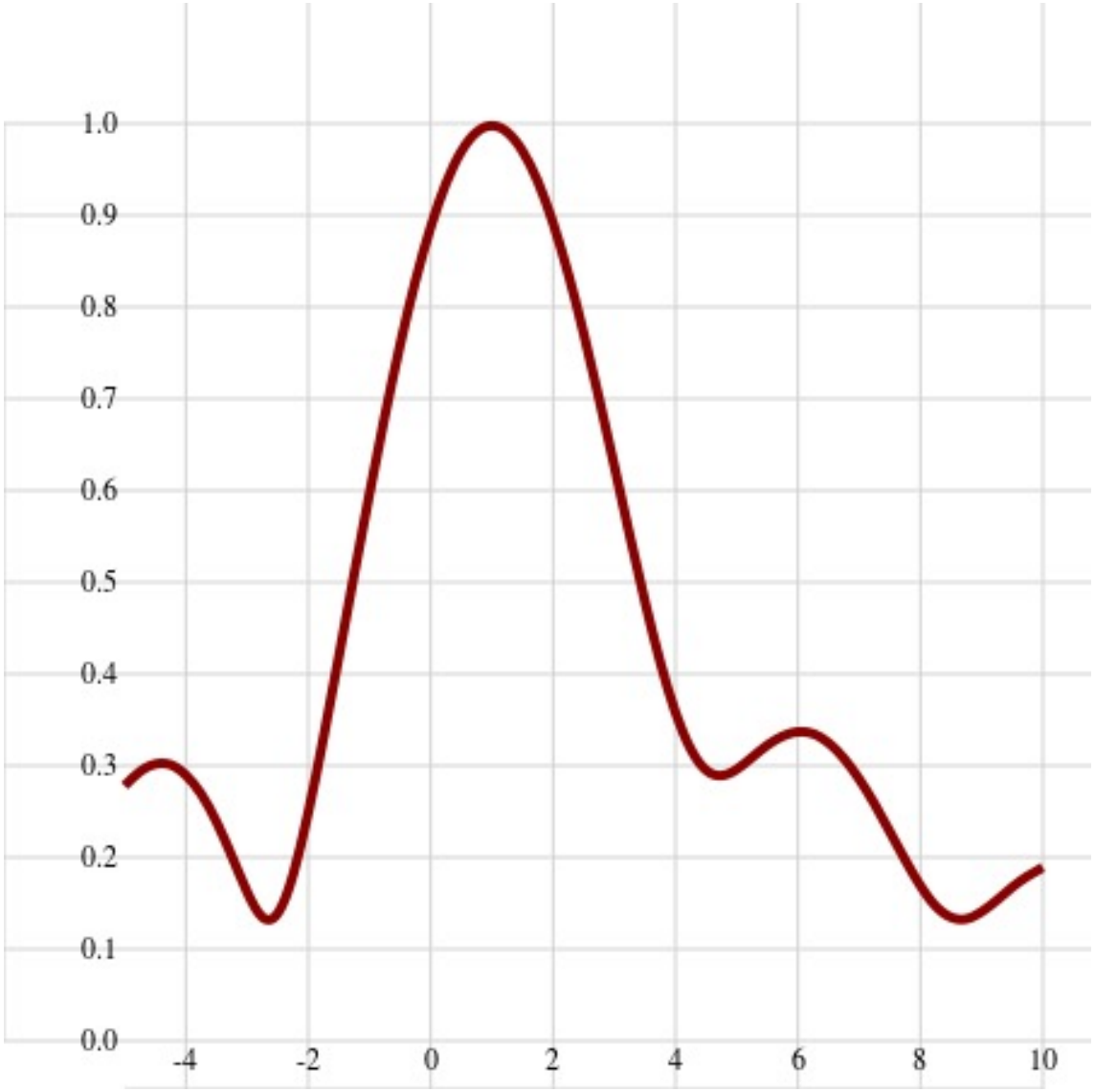
Horizontal Azimuth Pattern



Vertical Azimuth Pattern



Elevation pattern -5 to 10



Elevation pattern -5 to 90



Azimuth Horizontal Pattern Tabulation

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0°	0.246	-12.18	90°	0.818	-1.74	180°	0.137	-17.27	270°	0.818	-1.74
2°	0.251	-12.01	92°	0.787	-2.08	182°	0.139	-17.14	272°	0.842	-1.49
4°	0.255	-11.87	94°	0.756	-2.43	184°	0.141	-17.02	274°	0.865	-1.26
6°	0.260	-11.70	96°	0.726	-2.78	186°	0.142	-16.95	276°	0.889	-1.02
8°	0.264	-11.57	98°	0.695	-3.16	188°	0.144	-16.83	278°	0.912	-0.80
10°	0.269	-11.40	100°	0.664	-3.56	190°	0.146	-16.71	280°	0.936	-0.57
12°	0.288	-10.81	102°	0.634	-3.96	192°	0.149	-16.54	282°	0.948	-0.46
14°	0.307	-10.26	104°	0.604	-4.38	194°	0.152	-16.36	284°	0.959	-0.36
16°	0.326	-9.74	106°	0.573	-4.84	196°	0.155	-16.19	286°	0.971	-0.26
18°	0.345	-9.24	108°	0.543	-5.30	198°	0.158	-16.03	288°	0.982	-0.16
20°	0.364	-8.78	110°	0.513	-5.80	200°	0.161	-15.86	290°	0.994	-0.05
22°	0.401	-7.94	112°	0.488	-6.23	202°	0.164	-15.70	292°	0.994	-0.05
24°	0.438	-7.17	114°	0.462	-6.71	204°	0.167	-15.55	294°	1.000	0.00
26°	0.475	-6.47	116°	0.437	-7.19	206°	0.171	-15.34	296°	1.000	0.00
28°	0.512	-5.81	118°	0.411	-7.72	208°	0.174	-15.19	298°	0.992	-0.07
30°	0.549	-5.21	120°	0.386	-8.27	210°	0.177	-15.04	300°	0.992	-0.07
32°	0.592	-4.55	122°	0.365	-8.75	212°	0.184	-14.70	302°	0.978	-0.19
34°	0.635	-3.94	124°	0.344	-9.27	214°	0.191	-14.38	304°	0.964	-0.32
36°	0.679	-3.36	126°	0.324	-9.79	216°	0.197	-14.11	306°	0.951	-0.44
38°	0.722	-2.83	128°	0.303	-10.37	218°	0.204	-13.81	308°	0.937	-0.57
40°	0.765	-2.33	130°	0.282	-11.00	220°	0.211	-13.51	310°	0.923	-0.70
42°	0.797	-1.97	132°	0.268	-11.44	222°	0.225	-12.96	312°	0.891	-1.00
44°	0.828	-1.64	134°	0.254	-11.90	224°	0.239	-12.43	314°	0.860	-1.31
46°	0.860	-1.31	136°	0.239	-12.43	226°	0.254	-11.90	316°	0.828	-1.64
48°	0.891	-1.00	138°	0.225	-12.96	228°	0.268	-11.44	318°	0.797	-1.97
50°	0.923	-0.70	140°	0.211	-13.51	230°	0.282	-11.00	320°	0.765	-2.33
52°	0.937	-0.57	142°	0.204	-13.81	232°	0.303	-10.37	322°	0.722	-2.83
54°	0.951	-0.44	144°	0.197	-14.11	234°	0.324	-9.79	324°	0.679	-3.36
56°	0.964	-0.32	146°	0.191	-14.38	236°	0.344	-9.27	326°	0.635	-3.94
58°	0.978	-0.19	148°	0.184	-14.70	238°	0.365	-8.75	328°	0.592	-4.55
60°	0.992	-0.07	150°	0.177	-15.04	240°	0.386	-8.27	330°	0.549	-5.21
62°	0.992	-0.07	152°	0.174	-15.19	242°	0.411	-7.72	332°	0.512	-5.81
64°	1.000	0.00	154°	0.171	-15.34	244°	0.437	-7.19	334°	0.475	-6.47
66°	1.000	0.00	156°	0.167	-15.55	246°	0.462	-6.71	336°	0.438	-7.17
68°	0.994	-0.05	158°	0.164	-15.70	248°	0.488	-6.23	338°	0.401	-7.94
70°	0.994	-0.05	160°	0.161	-15.86	250°	0.513	-5.80	340°	0.364	-8.78
72°	0.982	-0.16	162°	0.158	-16.03	252°	0.543	-5.30	342°	0.345	-9.24
74°	0.971	-0.26	164°	0.155	-16.19	254°	0.573	-4.84	344°	0.326	-9.74
76°	0.959	-0.36	166°	0.152	-16.36	256°	0.604	-4.38	346°	0.307	-10.26
78°	0.948	-0.46	168°	0.149	-16.54	258°	0.634	-3.96	348°	0.288	-10.81
80°	0.936	-0.57	170°	0.146	-16.71	260°	0.664	-3.56	350°	0.269	-11.40
82°	0.912	-0.80	172°	0.144	-16.83	262°	0.695	-3.16	352°	0.264	-11.57
84°	0.889	-1.02	174°	0.142	-16.95	264°	0.726	-2.78	354°	0.260	-11.70
86°	0.865	-1.26	176°	0.141	-17.02	266°	0.756	-2.43	356°	0.255	-11.87
88°	0.842	-1.49	178°	0.139	-17.14	268°	0.787	-2.08	358°	0.251	-12.01

Azimuth Pattern Tabulation, FCC

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0°	0.246	-12.18	90°	0.818	-1.74	180°	0.137	-17.27	270°	0.818	-1.74
10°	0.269	-11.40	100°	0.664	-3.56	190°	0.146	-16.71	280°	0.936	-0.57
20°	0.364	-8.78	110°	0.513	-5.80	200°	0.161	-15.86	290°	0.994	-0.05
30°	0.549	-5.21	120°	0.386	-8.27	210°	0.177	-15.04	300°	0.992	-0.07
40°	0.765	-2.33	130°	0.282	-11.00	220°	0.211	-13.51	310°	0.923	-0.70
50°	0.923	-0.70	140°	0.211	-13.51	230°	0.282	-11.00	320°	0.765	-2.33
60°	0.992	-0.07	150°	0.177	-15.04	240°	0.386	-8.27	330°	0.549	-5.21
70°	0.994	-0.05	160°	0.161	-15.86	250°	0.513	-5.80	340°	0.364	-8.78
80°	0.936	-0.57	170°	0.146	-16.71	260°	0.664	-3.56	350°	0.269	-11.40

Elevation Pattern Tabulation

-5 to 10 in 0.25 increments, 10 to 90 in 0.50 increments

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
-5.00	0.278	-11.12	8.75	0.131	-17.65	35.00	0.051	-25.85	62.50	0.037	-28.64
-4.75	0.295	-10.60	9.00	0.140	-17.08	35.50	0.062	-24.15	63.00	0.027	-31.37
-4.50	0.303	-10.37	9.25	0.153	-16.31	36.00	0.069	-23.22	63.50	0.021	-33.56
-4.25	0.303	-10.37	9.50	0.168	-15.49	36.50	0.070	-23.10	64.00	0.023	-32.77
-4.00	0.291	-10.72	9.75	0.180	-14.89	37.00	0.065	-23.74	64.50	0.032	-29.90
-3.75	0.271	-11.34	10.00	0.189	-14.47	37.50	0.055	-25.19	65.00	0.043	-27.33
-3.50	0.240	-12.40	10.50	0.193	-14.29	38.00	0.043	-27.33	65.50	0.054	-25.35
-3.25	0.202	-13.89	11.00	0.185	-14.66	38.50	0.033	-29.63	66.00	0.064	-23.88
-3.00	0.161	-15.86	11.50	0.159	-15.97	39.00	0.031	-30.17	66.50	0.073	-22.73
-2.75	0.129	-17.79	12.00	0.123	-18.20	39.50	0.040	-27.96	67.00	0.080	-21.94
-2.50	0.132	-17.59	12.50	0.091	-20.82	40.00	0.052	-25.68	67.50	0.086	-21.31
-2.25	0.176	-15.09	13.00	0.084	-21.51	40.50	0.062	-24.15	68.00	0.089	-21.01
-2.00	0.247	-12.15	13.50	0.103	-19.74	41.00	0.067	-23.48	68.50	0.091	-20.82
-1.75	0.330	-9.63	14.00	0.125	-18.06	41.50	0.068	-23.35	69.00	0.091	-20.82
-1.50	0.419	-7.56	14.50	0.136	-17.33	42.00	0.063	-24.01	69.50	0.089	-21.01
-1.25	0.509	-5.87	15.00	0.133	-17.52	42.50	0.055	-25.19	70.00	0.086	-21.31
-1.00	0.597	-4.48	15.50	0.117	-18.64	43.00	0.043	-27.33	70.50	0.081	-21.83
-0.75	0.682	-3.32	16.00	0.091	-20.82	43.50	0.033	-29.63	71.00	0.075	-22.50
-0.50	0.760	-2.38	16.50	0.068	-23.35	44.00	0.029	-30.75	71.50	0.068	-23.35
-0.25	0.830	-1.62	17.00	0.062	-24.15	44.50	0.035	-29.12	72.00	0.060	-24.44
0.00	0.889	-1.02	17.50	0.077	-22.27	45.00	0.046	-26.74	72.50	0.052	-25.68
0.25	0.937	-0.57	18.00	0.096	-20.35	45.50	0.057	-24.88	73.00	0.043	-27.33
0.50	0.972	-0.25	18.50	0.107	-19.41	46.00	0.064	-23.88	73.50	0.034	-29.37
0.75	0.993	-0.06	19.00	0.107	-19.41	46.50	0.068	-23.35	74.00	0.024	-32.40
1.00	1.000	0.00	19.50	0.096	-20.35	47.00	0.067	-23.48	74.50	0.015	-36.48
1.25	0.993	-0.06	20.00	0.077	-22.27	47.50	0.062	-24.15	75.00	0.007	-43.10
1.50	0.972	-0.25	20.50	0.057	-24.88	48.00	0.054	-25.35	75.50	0.005	-46.02
1.75	0.939	-0.55	21.00	0.049	-26.20	48.50	0.043	-27.33	76.00	0.012	-38.42
2.00	0.893	-0.98	21.50	0.060	-24.44	49.00	0.033	-29.63	76.50	0.019	-34.42
2.25	0.837	-1.55	22.00	0.076	-22.38	49.50	0.027	-31.37	77.00	0.026	-31.70
2.50	0.772	-2.25	22.50	0.088	-21.11	50.00	0.031	-30.17	77.50	0.032	-29.90
2.75	0.701	-3.09	23.00	0.091	-20.82	50.50	0.041	-27.74	78.00	0.038	-28.40
3.00	0.627	-4.05	23.50	0.085	-21.41	51.00	0.052	-25.68	78.50	0.043	-27.33
3.25	0.551	-5.18	24.00	0.071	-22.97	51.50	0.062	-24.15	79.00	0.047	-26.56
3.50	0.478	-6.41	24.50	0.054	-25.35	52.00	0.068	-23.35	79.50	0.050	-26.02
3.75	0.411	-7.72	25.00	0.042	-27.54	52.50	0.071	-22.97	80.00	0.053	-25.51
4.00	0.355	-9.00	25.50	0.046	-26.74	53.00	0.070	-23.10	80.50	0.055	-25.19
4.25	0.315	-10.03	26.00	0.060	-24.44	53.50	0.066	-23.61	81.00	0.057	-24.88
4.50	0.292	-10.69	26.50	0.073	-22.73	54.00	0.058	-24.73	81.50	0.057	-24.88
4.75	0.287	-10.84	27.00	0.080	-21.94	54.50	0.048	-26.38	82.00	0.057	-24.88
5.00	0.295	-10.60	27.50	0.080	-21.94	55.00	0.037	-28.64	82.50	0.057	-24.88
5.25	0.309	-10.20	28.00	0.071	-22.97	55.50	0.028	-31.06	83.00	0.056	-25.04
5.50	0.323	-9.82	28.50	0.058	-24.73	56.00	0.026	-31.70	83.50	0.054	-25.35
5.75	0.333	-9.55	29.00	0.043	-27.33	56.50	0.032	-29.90	84.00	0.052	-25.68
6.00	0.338	-9.42	29.50	0.037	-28.64	57.00	0.042	-27.54	84.50	0.050	-26.02
6.25	0.336	-9.47	30.00	0.044	-27.13	57.50	0.053	-25.51	85.00	0.047	-26.56
6.50	0.326	-9.74	30.50	0.057	-24.88	58.00	0.063	-24.01	85.50	0.044	-27.13
6.75	0.309	-10.20	31.00	0.068	-23.35	58.50	0.070	-23.10	86.00	0.040	-27.96
7.00	0.286	-10.87	31.50	0.074	-22.62	59.00	0.075	-22.50	86.50	0.036	-28.87
7.25	0.259	-11.73	32.00	0.073	-22.73	59.50	0.077	-22.27	87.00	0.032	-29.90
7.50	0.228	-12.84	32.50	0.065	-23.74	60.00	0.077	-22.27	87.50	0.028	-31.06
7.75	0.197	-14.11	33.00	0.053	-25.51	60.50	0.073	-22.73	88.00	0.024	-32.40
8.00	0.168	-15.49	33.50	0.039	-28.18	61.00	0.067	-23.48	88.50	0.019	-34.42
8.25	0.145	-16.77	34.00	0.033	-29.63	61.50	0.058	-24.73	89.00	0.014	-37.08
8.50	0.133	-17.52	34.50	0.039	-28.18	62.00	0.048	-26.38	89.50	0.010	-40.00
8.75	0.131	-17.65	35.00	0.051	-25.85	62.50	0.037	-28.64	90.00	0.005	-46.02

Azimuth Vertical Pattern Tabulation

Angle	Field	dB	Angle	Field	dB	Angle	Field	dB	Angle	Field	dB
0°	0.333	-9.55	90°	1.000	0.00	180°	0.333	-9.55	270°	1.000	0.00
2°	0.331	-9.60	92°	0.996	-0.03	182°	0.331	-9.60	272°	0.996	-0.03
4°	0.328	-9.68	94°	0.991	-0.08	184°	0.328	-9.68	274°	0.991	-0.08
6°	0.323	-9.82	96°	0.983	-0.15	186°	0.323	-9.82	276°	0.983	-0.15
8°	0.316	-10.01	98°	0.970	-0.26	188°	0.316	-10.01	278°	0.970	-0.26
10°	0.309	-10.20	100°	0.957	-0.38	190°	0.309	-10.20	280°	0.957	-0.38
12°	0.299	-10.49	102°	0.937	-0.57	192°	0.299	-10.49	282°	0.937	-0.57
14°	0.288	-10.81	104°	0.916	-0.76	194°	0.288	-10.81	284°	0.916	-0.76
16°	0.277	-11.15	106°	0.892	-0.99	196°	0.277	-11.15	286°	0.892	-0.99
18°	0.264	-11.57	108°	0.865	-1.26	198°	0.264	-11.57	288°	0.865	-1.26
20°	0.251	-12.01	110°	0.838	-1.54	200°	0.251	-12.01	290°	0.838	-1.54
22°	0.240	-12.40	112°	0.805	-1.88	202°	0.240	-12.40	292°	0.805	-1.88
24°	0.229	-12.80	114°	0.772	-2.25	204°	0.229	-12.80	294°	0.772	-2.25
26°	0.221	-13.11	116°	0.737	-2.65	206°	0.221	-13.11	296°	0.737	-2.65
28°	0.217	-13.27	118°	0.700	-3.10	208°	0.217	-13.27	298°	0.700	-3.10
30°	0.213	-13.43	120°	0.663	-3.57	210°	0.213	-13.43	300°	0.663	-3.57
32°	0.223	-13.03	122°	0.624	-4.10	212°	0.223	-13.03	302°	0.624	-4.10
34°	0.232	-12.69	124°	0.585	-4.66	214°	0.232	-12.69	304°	0.585	-4.66
36°	0.248	-12.11	126°	0.546	-5.26	216°	0.248	-12.11	306°	0.546	-5.26
38°	0.271	-11.34	128°	0.507	-5.90	218°	0.271	-11.34	308°	0.507	-5.90
40°	0.294	-10.63	130°	0.467	-6.61	220°	0.294	-10.63	310°	0.467	-6.61
42°	0.326	-9.74	132°	0.430	-7.33	222°	0.326	-9.74	312°	0.430	-7.33
44°	0.358	-8.92	134°	0.393	-8.11	224°	0.358	-8.92	314°	0.393	-8.11
46°	0.393	-8.11	136°	0.358	-8.92	226°	0.393	-8.11	316°	0.358	-8.92
48°	0.430	-7.33	138°	0.326	-9.74	228°	0.430	-7.33	318°	0.326	-9.74
50°	0.467	-6.61	140°	0.294	-10.63	230°	0.467	-6.61	320°	0.294	-10.63
52°	0.507	-5.90	142°	0.271	-11.34	232°	0.507	-5.90	322°	0.271	-11.34
54°	0.546	-5.26	144°	0.248	-12.11	234°	0.546	-5.26	324°	0.248	-12.11
56°	0.585	-4.66	146°	0.232	-12.69	236°	0.585	-4.66	326°	0.232	-12.69
58°	0.624	-4.10	148°	0.223	-13.03	238°	0.624	-4.10	328°	0.223	-13.03
60°	0.663	-3.57	150°	0.213	-13.43	240°	0.663	-3.57	330°	0.213	-13.43
62°	0.700	-3.10	152°	0.217	-13.27	242°	0.700	-3.10	332°	0.217	-13.27
64°	0.737	-2.65	154°	0.221	-13.11	244°	0.737	-2.65	334°	0.221	-13.11
66°	0.772	-2.25	156°	0.229	-12.80	246°	0.772	-2.25	336°	0.229	-12.80
68°	0.805	-1.88	158°	0.240	-12.40	248°	0.805	-1.88	338°	0.240	-12.40
70°	0.838	-1.54	160°	0.251	-12.01	250°	0.838	-1.54	340°	0.251	-12.01
72°	0.865	-1.26	162°	0.264	-11.57	252°	0.865	-1.26	342°	0.264	-11.57
74°	0.892	-0.99	164°	0.277	-11.15	254°	0.892	-0.99	344°	0.277	-11.15
76°	0.916	-0.76	166°	0.288	-10.81	256°	0.916	-0.76	346°	0.288	-10.81
78°	0.937	-0.57	168°	0.299	-10.49	258°	0.937	-0.57	348°	0.299	-10.49
80°	0.957	-0.38	170°	0.309	-10.20	260°	0.957	-0.38	350°	0.309	-10.20
82°	0.970	-0.26	172°	0.316	-10.01	262°	0.970	-0.26	352°	0.316	-10.01
84°	0.983	-0.15	174°	0.323	-9.82	264°	0.983	-0.15	354°	0.323	-9.82
86°	0.991	-0.08	176°	0.328	-9.68	266°	0.991	-0.08	356°	0.328	-9.68
88°	0.996	-0.03	178°	0.331	-9.60	268°	0.996	-0.03	358°	0.331	-9.60