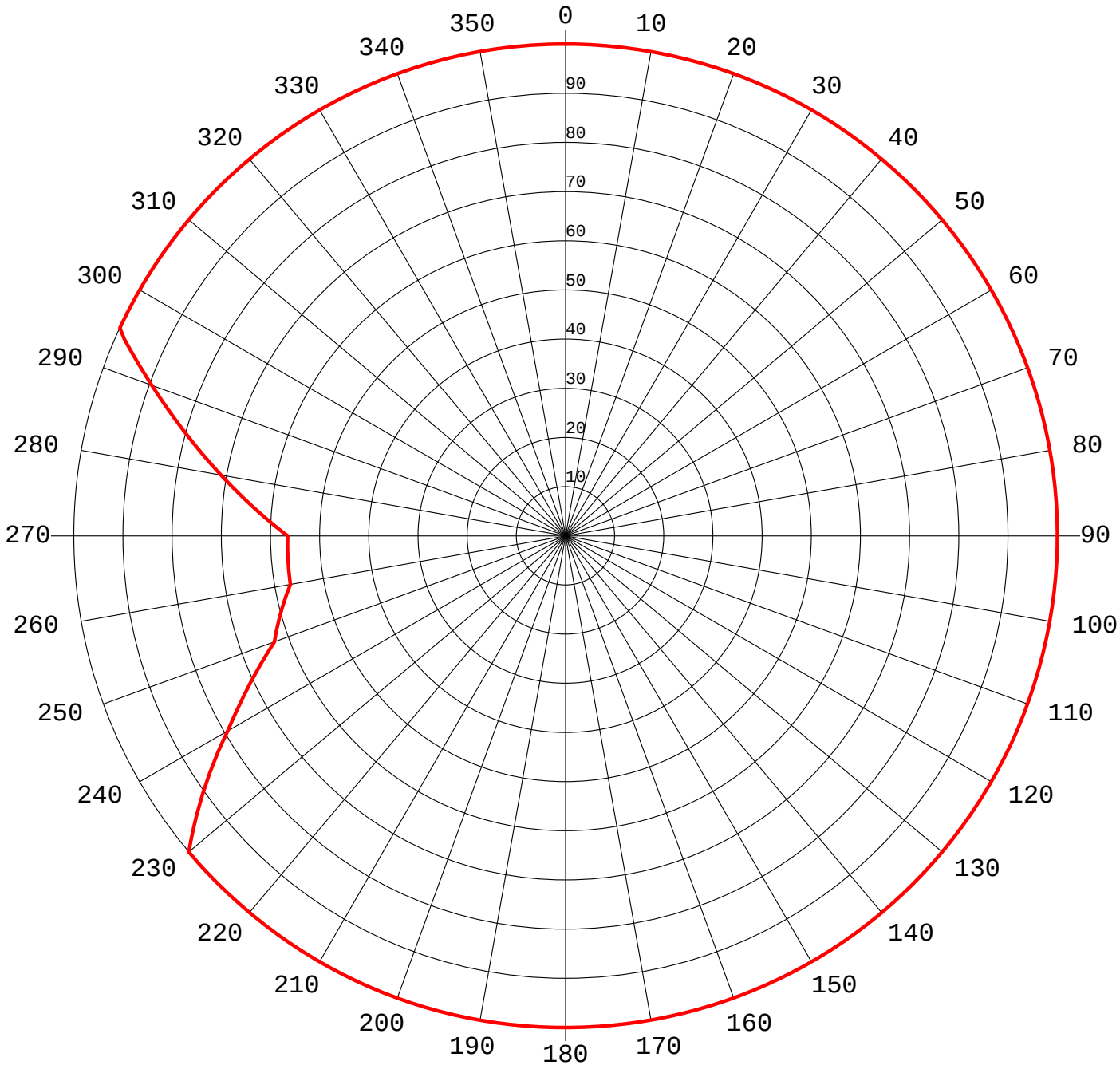
Composite Azimuth Pattern



4/29/11 Id: 10001

Composite Azimuth Pattern

Azi	Rel	dBk	kW	dB
0	1.000	18.51	71.0	-0.00
1	1.000	18.51	71.0	-0.00
2	1.000	18.51	71.0	-0.00
3	1.000	18.51	71.0	-0.00
4	1.000	18.51	71.0	-0.00
5	1.000	18.51	71.0	-0.00
6	1.000	18.51	71.0	-0.00
7	1.000	18.51	71.0	-0.00
8	1.000	18.51	71.0	-0.00
9	1.000	18.51	71.0	-0.00
10	1.000	18.51	71.0	-0.00
11	1.000	18.51	71.0	-0.00
12	1.000	18.51	71.0	-0.00
13	1.000	18.51	71.0	-0.00
14	1.000	18.51	71.0	-0.00
15	1.000	18.51	71.0	-0.00
16	1.000	18.51	71.0	-0.00
17	1.000	18.51	71.0	-0.00
18	1.000	18.51	71.0	-0.00
19	1.000	18.51	71.0	-0.00
20	1.000	18.51	71.0	-0.00
21	1.000	18.51	71.0	-0.00
22	1.000	18.51	71.0	-0.00
23	1.000	18.51	71.0	-0.00
24	1.000	18.51	71.0	-0.00
25	1.000	18.51	71.0	-0.00
26	1.000	18.51	71.0	-0.00
27	1.000	18.51	71.0	-0.00
28	1.000	18.51	71.0	-0.00
29	1.000	18.51	71.0	-0.00
30	1.000	18.51	71.0	-0.00
31	1.000	18.51	71.0	-0.00
32	1.000	18.51	71.0	-0.00
33	1.000	18.51	71.0	-0.00
34	1.000	18.51	71.0	-0.00
35	1.000	18.51	71.0	-0.00
36	1.000	18.51	71.0	-0.00
37	1.000	18.51	71.0	-0.00
38	1.000	18.51	71.0	-0.00
39	1.000	18.51	71.0	-0.00
40	1.000	18.51	71.0	-0.00
41	1.000	18.51	71.0	-0.00
42	1.000	18.51	71.0	-0.00
43	1.000	18.51	71.0	-0.00
44	1.000	18.51	71.0	-0.00
45	1.000	18.51	71.0	-0.00
46	1.000	18.51	71.0	-0.00
47	1.000	18.51	71.0	-0.00
48	1.000	18.51	71.0	-0.00
49	1.000	18.51	71.0	-0.00
50	1.000	18.51	71.0	-0.00
51	1.000	18.51	71.0	-0.00
52	1.000	18.51	71.0	-0.00
53	1.000	18.51	71.0	-0.00
54	1.000	18.51	71.0	-0.00
55	1.000	18.51	71.0	-0.00
56	1.000	18.51	71.0	-0.00
57	1.000	18.51	71.0	-0.00
58	1.000	18.51	71.0	-0.00
59	1.000	18.51	71.0	-0.00
60	1.000	18.51	71.0	-0.00
61	1.000	18.51	71.0	-0.00
62	1.000	18.51	71.0	-0.00
63	1.000	18.51	71.0	-0.00
64	1.000	18.51	71.0	-0.00
65	1.000	18.51	71.0	-0.00
66	1.000	18.51	71.0	-0.00
67	1.000	18.51	71.0	-0.00
68	1.000	18.51	71.0	-0.00
69	1.000	18.51	71.0	-0.00
70	1.000	18.51	71.0	-0.00
71	1.000	18.51	71.0	-0.00
72	1.000	18.51	71.0	-0.00
73	1.000	18.51	71.0	-0.00
74	1.000	18.51	71.0	-0.00
75	1.000	18.51	71.0	-0.00
76	1.000	18.51	71.0	-0.00
77	1.000	18.51	71.0	-0.00
78	1.000	18.51	71.0	-0.00
79	1.000	18.51	71.0	-0.00
80	1.000	18.51	71.0	-0.00
81	1.000	18.51	71.0	-0.00
82	1.000	18.51	71.0	-0.00
83	1.000	18.51	71.0	-0.00
84	1.000	18.51	71.0	-0.00
85	1.000	18.51	71.0	-0.00
86	1.000	18.51	71.0	-0.00
87	1.000	18.51	71.0	-0.00
88	1.000	18.51	71.0	-0.00
89	1.000	18.51	71.0	-0.00
90	1.000	18.51	71.0	-0.00
91	1.000	18.51	71.0	-0.00
92	1.000	18.51	71.0	-0.00
93	1.000	18.51	71.0	-0.00
94	1.000	18.51	71.0	-0.00
95	1.000	18.51	71.0	-0.00
96	1.000	18.51	71.0	-0.00
97	1.000	18.51	71.0	-0.00
98	1.000	18.51	71.0	-0.00
99	1.000	18.51	71.0	-0.00
100	1.000	18.51	71.0	-0.00
101	1.000	18.51	71.0	-0.00
102	1.000	18.51	71.0	-0.00
103	1.000	18.51	71.0	-0.00

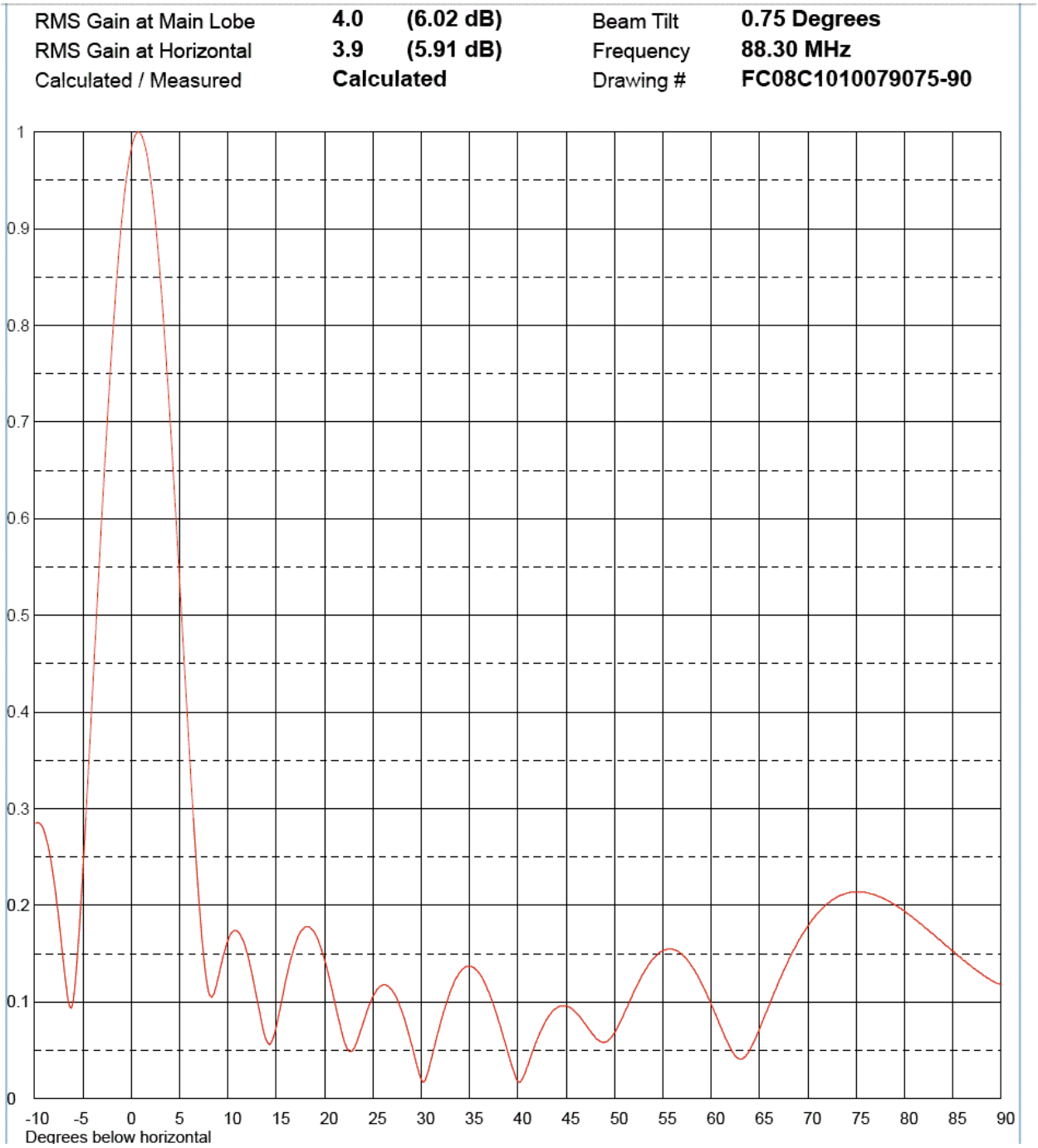
Azi	Rel	dBk	kW	dB
104	1.000	18.51	71.0	-0.00
105	1.000	18.51	71.0	-0.00
106	1.000	18.51	71.0	-0.00
107	1.000	18.51	71.0	-0.00
108	1.000	18.51	71.0	-0.00
109	1.000	18.51	71.0	-0.00
110	1.000	18.51	71.0	-0.00
111	1.000	18.51	71.0	-0.00
112	1.000	18.51	71.0	-0.00
113	1.000	18.51	71.0	-0.00
114	1.000	18.51	71.0	-0.00
115	1.000	18.51	71.0	-0.00
116	1.000	18.51	71.0	-0.00
117	1.000	18.51	71.0	-0.00
118	1.000	18.51	71.0	-0.00
119	1.000	18.51	71.0	-0.00
120	1.000	18.51	71.0	-0.00
121	1.000	18.51	71.0	-0.00
122	1.000	18.51	71.0	-0.00
123	1.000	18.51	71.0	-0.00
124	1.000	18.51	71.0	-0.00
125	1.000	18.51	71.0	-0.00
126	1.000	18.51	71.0	-0.00
127	1.000	18.51	71.0	-0.00
128	1.000	18.51	71.0	-0.00
129	1.000	18.51	71.0	-0.00
130	1.000	18.51	71.0	-0.00
131	1.000	18.51	71.0	-0.00
132	1.000	18.51	71.0	-0.00
133	1.000	18.51	71.0	-0.00
134	1.000	18.51	71.0	-0.00
135	1.000	18.51	71.0	-0.00
136	1.000	18.51	71.0	-0.00
137	1.000	18.51	71.0	-0.00
138	1.000	18.51	71.0	-0.00
139	1.000	18.51	71.0	-0.00
140	1.000	18.51	71.0	-0.00
141	1.000	18.51	71.0	-0.00
142	1.000	18.51	71.0	-0.00
143	1.000	18.51	71.0	-0.00
144	1.000	18.51	71.0	-0.00
145	1.000	18.51	71.0	-0.00
146	1.000	18.51	71.0	-0.00
147	1.000	18.51	71.0	-0.00
148	1.000	18.51	71.0	-0.00
149	1.000	18.51	71.0	-0.00
150	1.000	18.51	71.0	-0.00
151	1.000	18.51	71.0	-0.00
152	1.000	18.51	71.0	-0.00
153	1.000	18.51	71.0	-0.00
154	1.000	18.51	71.0	-0.00
155	1.000	18.51	71.0	-0.00
156	1.000	18.51	71.0	-0.00
157	1.000	18.51	71.0	-0.00
158	1.000	18.51	71.0	-0.00
159	1.000	18.51	71.0	-0.00
160	1.000	18.51	71.0	-0.00
161	1.000	18.51	71.0	-0.00
162	1.000	18.51	71.0	-0.00
163	1.000	18.51	71.0	-0.00
164	1.000	18.51	71.0	-0.00
165	1.000	18.51	71.0	0.00
166	1.000	18.51	71.0	0.00
167	1.000	18.51	71.0	0.00
168	1.000	18.51	71.0	0.00
169	1.000	18.51	71.0	0.00
170	1.000	18.51	71.0	0.00
171	1.000	18.51	71.0	0.00
172	1.000	18.51	71.0	0.00
173	1.000	18.51	71.0	0.00
174	1.000	18.51	71.0	0.00
175	1.000	18.51	71.0	0.00
176	1.000	18.51	71.0	0.00
177	1.000	18.51	71.0	0.00
178	1.000	18.51	71.0	0.00
179	1.000	18.51	71.0	0.00
180	1.000	18.51	71.0	0.00
181	1.000	18.51	71.0	0.00
182	1.000	18.51	71.0	0.00
183	1.000	18.51	71.0	0.00
184	1.000	18.51	71.0	0.00
185	1.000	18.51	71.0	0.00
186	1.000	18.51	71.0	0.00
187	1.000	18.51	71.0	0.00
188	1.000	18.51	71.0	0.00
189	1.000	18.51	71.0	0.00
190	1.000	18.51	71.0	0.00
191	1.000	18.51	71.0	0.00
192	1.000	18.51	71.0	0.00
193	1.000	18.51	71.0	0.00
194	1.000	18.51	71.0	0.00
195	1.000	18.51	71.0	0.00
196	1.000	18.51	71.0	-0.00
197	1.000	18.51	71.0	-0.00
198	1.000	18.51	71.0	-0.00
199	1.000	18.51	71.0	-0.00
200	1.000	18.51	71.0	-0.00
201	1.000	18.51	71.0	-0.00
202	1.000	18.51	71.0	-0.00
203	1.000	18.51	71.0	-0.00
204	1.000	18.51	71.0	-0.00
205	1.000	18.51	71.0	-0.00
206	1.000	18.51	71.0	-0.00
207	1.000	18.51	71.0	-0.00
208	1.000	18.51	71.0	-0.00
209	1.000	18.51	71.0	-0.00
210	1.000	18.51	71.0	-0.00
211	1.000	18.51	71.0	-0.00
212	1.000	18.51	71.0	-0.00
213	1.000	18.51	71.0	-0.00

Azi	Rel	dBk	kW	dB
214	1.000	18.51	71.0	-0.00
215	1.000	18.51	71.0	-0.00
216	1.000	18.51	71.0	-0.00
217	1.000	18.51	71.0	-0.00
218	1.000	18.51	71.0	-0.00
219	1.000	18.51	71.0	-0.00
220	1.000	18.51	71.0	-0.00
221	1.000	18.51	71.0	-0.00
222	1.000	18.51	71.0	-0.00
223	1.000	18.51	71.0	-0.00
224	1.000	18.51	71.0	-0.00
225	1.000	18.51	71.0	-0.00
226	1.000	18.51	71.0	-0.00
227	1.000	18.51	71.0	-0.00
228	1.000	18.51	71.0	-0.00
229	1.000	18.51	71.0	-0.00
230	1.000	18.51	71.0	-0.00
231	0.979	18.33	68.1	-0.18
232	0.959	18.15	65.2	-0.37
233	0.938	17.96	62.5	-0.56
234	0.917	17.76	59.7	-0.75
235	0.897	17.56	57.1	-0.95
236	0.876	17.36	54.5	-1.15
237	0.855	17.15	51.9	-1.36
238	0.834	16.94	49.4	-1.57
239	0.814	16.72	47.0	-1.79
240	0.793	16.50	44.7	-2.01
241	0.775	16.30	42.7	-2.21
242	0.757	16.10	40.7	-2.41
243	0.740	15.90	38.9	-2.61
244	0.723	15.70	37.1	-2.81
245	0.707	15.50	35.5	-3.01
246	0.691	15.30	33.9	-3.21
247	0.675	15.10	32.4	-3.41
248	0.660	14.90	30.9	-3.61
249	0.645	14.70	29.5	-3.81
250	0.630	14.50	28.2	-4.01
251	0.624	14.41	27.6	-4.10
252	0.618	14.33	27.1	-4.19
253	0.611	14.24	26.5	-4.27
254	0.605	14.15	26.0	-4.36
255	0.599	14.06	25.5	-4.45
256	0.593	13.97	25.0	-4.54
257	0.587	13.88	24.4	-4.63
258	0.580	13.79	23.9	-4.73
259	0.574	13.69	23.4	-4.82
260	0.568	13.60	22.9	-4.91
261	0.568	13.59	22.9	-4.92
262	0.567	13.59	22.9	-4.92
263	0.567	13.59	22.8	-4.93
264	0.567	13.58	22.8	-4.93
265	0.567	13.58	22.8	-4.94
266	0.566	13.57	22.8	-4.94
267	0.566	13.57	22.7	-4.95
268	0.566	13.56	22.7	-4.95
269	0.565	13.56	22.7	-4.95
270	0.565	13.55	22.7	-4.96
271	0.578	13.75	23.7	-4.76
272	0.592	13.95	24.9	-4.56
273	0.605	14.15	26.0	-4.36
274	0.620	14.35	27.2	-4.16
275	0.634	14.55	28.5	-3.96
276	0.649	14.75	29.9	-3.76
277	0.664	14.95	31.3	-3.56
278	0.679	15.15	32.8	-3.36
279	0.695	15.35	34.3	-3.16
280	0.711	15.55	35.9	-2.96
281	0.728	15.75	37.6	-2.76
282	0.745	15.95	39.4	-2.56
283	0.762	16.15	41.2	-2.36
284	0.780	16.35	43.2	-2.16
285	0.798	16.55	45.2	-1.96
286	0.817	16.75	47.4	-1.76
287	0.836	16.95	49.6	-1.56
288	0.855	17.15	51.9	-1.36
289	0.875	17.35	54.4	-1.16
290	0.895	17.55	56.9	-0.96
291	0.916	17.75	59.6	-0.76
292	0.938	17.95	62.4	-0.56
293	0.960	18.15	65.4	-0.36
294	0.982	18.35	68.4	-0.16
295	1.000	18.51	71.0	0.00
296	1.000	18.51	71.0	0.00
297	1.000	18.51	71.0	0.00
298	1.000	18.51	71.0	0.00
299	1.000	18.51	71.0	-0.00
300	1.000	18.51	71.0	-0.00
301	1.000	18.51	71.0	-0.00
302	1.000	18.51	71.0	-0.00
303	1.000	18.51	71.0	-0.00
304	1.000	18.51	71.0	-0.00
305	1.000	18.51	71.0	-0.00
306	1.000	18.51	71.0	-0.00
307	1.000	18.51	71.0	-0.00
308	1.000	18.51	71.0	-0.00
309	1.000	18.51	71.0	-0.00
310	1.000	18.51	71.0	-0.00
311	1.000	18.51	71.0	-0.00
312	1.000	18.51	71.0	-0.00
313	1.000	18.51	71.0	-0.00
314	1.000	18.51	71.0	-0.00
315	1.000	18.51	71.0	-0.00
316	1.000	18.51	71.0	-0.00
317	1.000	18.51	71.0	-0.00
318	1.000	18.51	71.0	-0.00
319	1.000	18.51	71.0	-0.00
320	1.000	18.51	71.0	-0.00
321	1.000	18.51	71.0	-0.00
322	1.000	18.51	71.0	-0.00
323	1.000	18.51	71.0	-0.00

Azi	Rel	dBk	kW	dB	Azi	Rel	dBk	kW	dB
324	1.000	18.51	71.0	-0.00	342	1.000	18.51	71.0	-0.00
325	1.000	18.51	71.0	-0.00	343	1.000	18.51	71.0	-0.00
326	1.000	18.51	71.0	-0.00	344	1.000	18.51	71.0	-0.00
327	1.000	18.51	71.0	-0.00	345	1.000	18.51	71.0	-0.00
328	1.000	18.51	71.0	-0.00	346	1.000	18.51	71.0	-0.00
329	1.000	18.51	71.0	-0.00	347	1.000	18.51	71.0	-0.00
330	1.000	18.51	71.0	-0.00	348	1.000	18.51	71.0	-0.00
331	1.000	18.51	71.0	-0.00	349	1.000	18.51	71.0	-0.00
332	1.000	18.51	71.0	-0.00	350	1.000	18.51	71.0	-0.00
333	1.000	18.51	71.0	-0.00	351	1.000	18.51	71.0	-0.00
334	1.000	18.51	71.0	-0.00	352	1.000	18.51	71.0	-0.00
335	1.000	18.51	71.0	-0.00	353	1.000	18.51	71.0	-0.00
336	1.000	18.51	71.0	-0.00	354	1.000	18.51	71.0	-0.00
337	1.000	18.51	71.0	-0.00	355	1.000	18.51	71.0	-0.00
338	1.000	18.51	71.0	-0.00	356	1.000	18.51	71.0	-0.00
339	1.000	18.51	71.0	-0.00	357	1.000	18.51	71.0	-0.00
340	1.000	18.51	71.0	-0.00	358	1.000	18.51	71.0	-0.00
341	1.000	18.51	71.0	-0.00	359	1.000	18.51	71.0	-0.00

Rotation Angle = 0

WHWC Proposed Vertical Elevation Pattern



WHWC Vertical Elevation Pattern Field Table

TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing # **FC08C1010079075-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.284	2.4	0.916	10.6	0.174	30.5	0.022	51.0	0.089	71.5	0.197
-9.5	0.285	2.6	0.895	10.8	0.174	31.0	0.040	51.5	0.100	72.0	0.202
-9.0	0.276	2.8	0.873	11.0	0.173	31.5	0.060	52.0	0.111	72.5	0.206
-8.5	0.256	3.0	0.848	11.5	0.165	32.0	0.079	52.5	0.121	73.0	0.209
-8.0	0.225	3.2	0.822	12.0	0.150	32.5	0.096	53.0	0.130	73.5	0.211
-7.5	0.185	3.4	0.794	12.5	0.128	33.0	0.111	53.5	0.139	74.0	0.213
-7.0	0.139	3.6	0.765	13.0	0.103	33.5	0.123	54.0	0.145	74.5	0.214
-6.5	0.100	3.8	0.735	13.5	0.078	34.0	0.131	54.5	0.150	75.0	0.214
-6.0	0.103	4.0	0.703	14.0	0.060	34.5	0.136	55.0	0.153	75.5	0.214
-5.5	0.159	4.2	0.671	14.5	0.059	35.0	0.137	55.5	0.155	76.0	0.213
-5.0	0.240	4.4	0.637	15.0	0.075	35.5	0.135	56.0	0.155	76.5	0.212
-4.5	0.330	4.6	0.603	15.5	0.099	36.0	0.130	56.5	0.153	77.0	0.211
-4.0	0.425	4.8	0.568	16.0	0.124	36.5	0.121	57.0	0.149	77.5	0.209
-3.5	0.520	5.0	0.533	16.5	0.145	37.0	0.110	57.5	0.144	78.0	0.206
-3.0	0.613	5.2	0.498	17.0	0.161	37.5	0.096	58.0	0.137	78.5	0.204
-2.8	0.649	5.4	0.463	17.5	0.173	38.0	0.080	58.5	0.129	79.0	0.201
-2.6	0.683	5.6	0.428	18.0	0.178	38.5	0.063	59.0	0.119	79.5	0.197
-2.4	0.717	5.8	0.393	18.5	0.177	39.0	0.046	59.5	0.109	80.0	0.194
-2.2	0.749	6.0	0.359	19.0	0.171	39.5	0.030	60.0	0.097	80.5	0.190
-2.0	0.780	6.2	0.325	19.5	0.159	40.0	0.018	60.5	0.086	81.0	0.186
-1.8	0.809	6.4	0.293	20.0	0.143	40.5	0.021	61.0	0.074	81.5	0.182
-1.6	0.837	6.6	0.262	20.5	0.124	41.0	0.034	61.5	0.062	82.0	0.178
-1.4	0.863	6.8	0.232	21.0	0.102	41.5	0.049	62.0	0.052	82.5	0.174
-1.2	0.887	7.0	0.204	21.5	0.080	42.0	0.062	62.5	0.044	83.0	0.170
-1.0	0.908	7.2	0.178	22.0	0.060	42.5	0.073	63.0	0.041	83.5	0.165
-0.8	0.928	7.4	0.155	22.5	0.049	43.0	0.083	63.5	0.043	84.0	0.161
-0.6	0.945	7.6	0.136	23.0	0.052	43.5	0.090	64.0	0.051	84.5	0.157
-0.4	0.960	7.8	0.121	23.5	0.064	44.0	0.094	64.5	0.061	85.0	0.153
-0.2	0.973	8.0	0.110	24.0	0.079	44.5	0.096	65.0	0.073	85.5	0.148
0.0	0.983	8.2	0.106	24.5	0.094	45.0	0.096	65.5	0.085	86.0	0.144
0.2	0.991	8.4	0.106	25.0	0.106	45.5	0.094	66.0	0.097	86.5	0.140
0.4	0.997	8.6	0.110	25.5	0.114	46.0	0.089	66.5	0.110	87.0	0.136
0.6	1.000	8.8	0.117	26.0	0.118	46.5	0.083	67.0	0.122	87.5	0.132
0.8	1.000	9.0	0.126	26.5	0.117	47.0	0.077	67.5	0.133	88.0	0.129
1.0	0.998	9.2	0.135	27.0	0.112	47.5	0.070	68.0	0.144	88.5	0.125
1.2	0.993	9.4	0.143	27.5	0.103	48.0	0.063	68.5	0.154	89.0	0.122
1.4	0.986	9.6	0.151	28.0	0.090	48.5	0.059	69.0	0.163	89.5	0.120
1.6	0.977	9.8	0.158	28.5	0.074	49.0	0.059	69.5	0.171	90.0	0.118
1.8	0.965	10.0	0.164	29.0	0.056	49.5	0.062	70.0	0.179		
2.0	0.951	10.2	0.169	29.5	0.036	50.0	0.069	70.5	0.186		
2.2	0.934	10.4	0.172	30.0	0.020	50.5	0.078	71.0	0.192		

Directional Antenna

The proposed custom directional antenna pattern meets the Commission's rules in that the radio frequency emission does not change more than two dB for each ten degrees of azimuthal variation. Also, the maximum pattern attenuation in the deepest null is less than 15 dB. The pattern shown is a composite of the maximum field values in the horizontal and vertical planes.

The proposed antenna will be mounted on the side or leg of a tower that has been specified by the antenna manufacturer in accordance with the instructions provided by the manufacturer. The antenna will not be mounted on the top of a tower that includes a top mounted platform larger than the nominal cross-sectional area of the tower in the horizontal plane. No other antennas of any type will be mounted at the same tower level as the directional antenna nor within the horizontal or vertical distance specified by the manufacturer as being necessary to maintain proper directional operation. The antenna will be designed and tested by a major manufacturer of broadcast antennas known to the Commission. The pattern will be achieved through traditional methods including power-splitting, resonators and phasing.