



PATTERN CERTIFICATION

TABLE OF CONTENTS

Narrative Pattern Certification

FM Azimuth Pattern Approval

Azimuth Patterns of Horizontal and Vertically Polarized Planes

Tabulation of Measured Horizontal and Vertically Polarized Planes

Composite Pattern of Horizontal and Vertically Polarized Planes

Tabulation of Composite Pattern

Gain Summary

Rectangular Plot of Vertical Plane Pattern

Sketch of Scale Model Test



PATTERN CERTIFICATION

Method of Measurement

The azimuth pattern for "WYNZ", Dielectric Document Sketch # 25, was measured in the following manner.

A single 4.4 to 1 scale model "DCRM" bay radiator was mounted on a similarly scaled model of the tower according to information provided to Dielectric by the customer; refer to Dielectric Document Sketch # 25. The antenna under test, all parasitics, all known tower appurtenances, and the tower section were rotated through 360 degrees while receiving a signal at the appropriate frequency from a linear cavity-backed source antenna. Both the horizontal and vertical polarization azimuth patterns were measured in an anechoic test range.

The transmit and scale model antennas are mounted at identical elevations and at opposite ends of the chamber. A Hewlett Packard model 8752C network analyzer was used to supply the RF signal to the source antenna at 4.4 times the fundamental FM frequency and to receive the signal intercepted by the antenna under test. The received signal was converted to a relative level, referenced to the source. This level was stored on a computer acting as the master controller. The computer controls the measurement system via IEEE-488 control bus through a GPIB card.

Statement of Qualifications

Keith L. Pelletier is a Senior Electrical Engineer here at Dielectric. He received a BS in Electrical Engineering Technology from the University of Maine in 1998. He has over 6 years experience in RF antenna engineering and has been employed by Dielectric Communications since 1997.

Signed By: Keith Pelletier

Date: 2/10/04



MSO NO: 78645

DATE: February 9, 2004

PATTERN NO: WYNZ - 25

FM AZIMUTH PATTERN APPROVAL

The azimuth pattern of the horizontal polarization and vertical polarization as supplied by Dielectric in the document labeled “ WYNZ - 25 ”, is acknowledged as acceptable. We understand that Dielectric does not guarantee or predict signal strength in any particular location.

(Customer's name)

By: _____
(Name typed or printed)

Title: _____

(Signature)

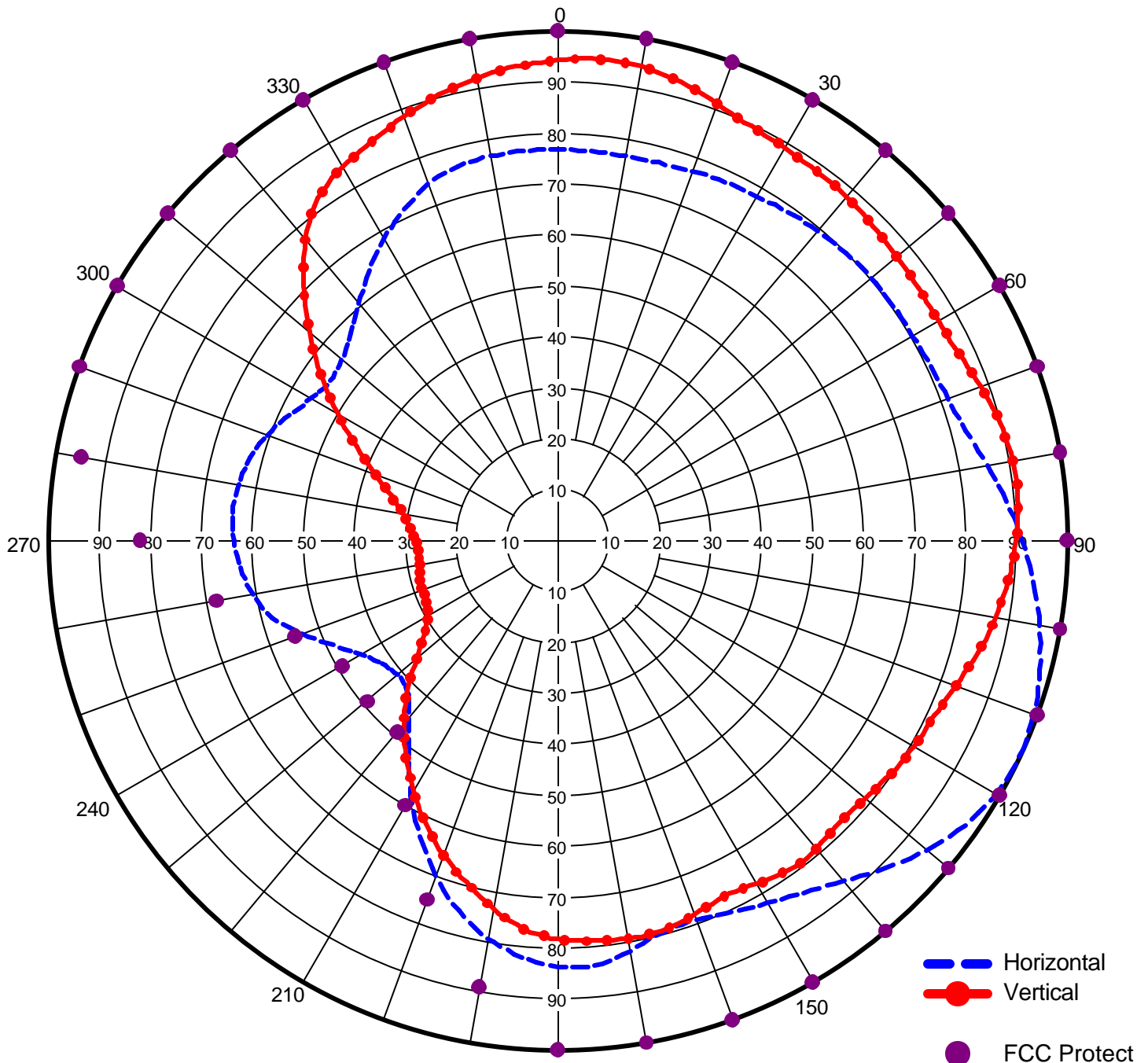


Proposal Number **78645**
Date **Feb 9, 2004**
Call Letters **WYNZ**
Location **Westbrook, ME**
Customer **Bromo Communications**
Antenna Type **DCRM4EFE75D**

AZIMUTH PATTERN

86.2% Ccov - 50.3% Hrms - 49.7% Vrms

Gain	1.78 (2.5) HPOL 1.64 (2.15) VPOL	Frequency	100.9
Calculated / Measured	Measured	Drawing #	25





Proposal Number **78645**
 Date **9-Feb-04**
 Call Letters **WYNZ**
 Location **Westbrook, ME**
 Customer **Bromo Communication**
 Antenna Type **DCRM4FE75D**
 Frequency **100.90 MHz**
 Drawing #: **25**

TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.768	45	0.799	90	0.912	135	0.909	180	0.836	225	0.418	270	0.636	315	0.575
1	0.768	46	0.800	91	0.917	136	0.901	181	0.834	226	0.414	271	0.637	316	0.581
2	0.768	47	0.801	92	0.922	137	0.894	182	0.831	227	0.412	272	0.639	317	0.587
3	0.767	48	0.801	93	0.928	138	0.887	183	0.828	228	0.410	273	0.640	318	0.594
4	0.767	49	0.802	94	0.932	139	0.880	184	0.824	229	0.410	274	0.640	319	0.601
5	0.767	50	0.802	95	0.937	140	0.873	185	0.820	230	0.410	275	0.640	320	0.608
6	0.767	51	0.802	96	0.942	141	0.866	186	0.815	231	0.411	276	0.640	321	0.615
7	0.767	52	0.802	97	0.947	142	0.860	187	0.810	232	0.412	277	0.640	322	0.622
8	0.766	53	0.802	98	0.952	143	0.854	188	0.805	233	0.415	278	0.639	323	0.630
9	0.766	54	0.802	99	0.956	144	0.848	189	0.799	234	0.418	279	0.638	324	0.637
10	0.766	55	0.803	100	0.959	145	0.843	190	0.792	235	0.421	280	0.637	325	0.646
11	0.766	56	0.803	101	0.964	146	0.838	191	0.786	236	0.425	281	0.635	326	0.653
12	0.766	57	0.803	102	0.968	147	0.834	192	0.778	237	0.430	282	0.633	327	0.661
13	0.767	58	0.803	103	0.971	148	0.830	193	0.770	238	0.435	283	0.631	328	0.667
14	0.767	59	0.803	104	0.976	149	0.826	194	0.762	239	0.440	284	0.628	329	0.675
15	0.768	60	0.804	105	0.979	150	0.822	195	0.752	240	0.447	285	0.625	330	0.682
16	0.768	61	0.804	106	0.983	151	0.819	196	0.743	241	0.453	286	0.622	331	0.690
17	0.769	62	0.805	107	0.986	152	0.815	197	0.734	242	0.461	287	0.619	332	0.696
18	0.770	63	0.805	108	0.989	153	0.812	198	0.723	243	0.469	288	0.615	333	0.704
19	0.771	64	0.806	109	0.992	154	0.809	199	0.712	244	0.477	289	0.611	334	0.710
20	0.772	65	0.807	110	0.994	155	0.805	200	0.701	245	0.486	290	0.607	335	0.717
21	0.773	66	0.808	111	0.996	156	0.802	201	0.689	246	0.495	291	0.602	336	0.723
22	0.774	67	0.809	112	0.997	157	0.800	202	0.677	247	0.505	292	0.598	337	0.728
23	0.775	68	0.811	113	1.000	158	0.797	203	0.666	248	0.515	293	0.593	338	0.734
24	0.776	69	0.813	114	1.000	159	0.794	204	0.654	249	0.525	294	0.588	339	0.739
25	0.777	70	0.815	115	1.000	160	0.793	205	0.641	250	0.536	295	0.583	340	0.745
26	0.778	71	0.816	116	1.000	161	0.791	206	0.629	251	0.546	296	0.577	341	0.749
27	0.779	72	0.819	117	1.000	162	0.791	207	0.616	252	0.555	297	0.572	342	0.752
28	0.780	73	0.822	118	0.997	163	0.791	208	0.603	253	0.565	298	0.567	343	0.756
29	0.781	74	0.826	119	0.996	164	0.793	209	0.591	254	0.573	299	0.562	344	0.758
30	0.781	75	0.830	120	0.994	165	0.796	210	0.577	255	0.581	300	0.558	345	0.761
31	0.782	76	0.834	121	0.991	166	0.799	211	0.565	256	0.588	301	0.554	346	0.763
32	0.783	77	0.839	122	0.988	167	0.803	212	0.551	257	0.594	302	0.551	347	0.764
33	0.785	78	0.844	123	0.984	168	0.808	213	0.539	258	0.600	303	0.548	348	0.765
34	0.786	79	0.850	124	0.979	169	0.813	214	0.525	259	0.605	304	0.547	349	0.765
35	0.787	80	0.855	125	0.975	170	0.817	215	0.513	260	0.609	305	0.546	350	0.766
36	0.789	81	0.861	126	0.969	171	0.822	216	0.500	261	0.613	306	0.546	351	0.766
37	0.790	82	0.867	127	0.964	172	0.827	217	0.487	262	0.616	307	0.546	352	0.767
38	0.791	83	0.873	128	0.958	173	0.831	218	0.476	263	0.619	308	0.548	353	0.767
39	0.792	84	0.879	129	0.952	174	0.834	219	0.464	264	0.622	309	0.550	354	0.768
40	0.793	85	0.885	130	0.945	175	0.836	220	0.454	265	0.625	310	0.553	355	0.768
41	0.794	86	0.890	131	0.938	176	0.838	221	0.445	266	0.628	311	0.556	356	0.768
42	0.796	87	0.896	132	0.931	177	0.838	222	0.436	267	0.630	312	0.560	357	0.768
43	0.797	88	0.901	133	0.923	178	0.838	223	0.429	268	0.632	313	0.565	358	0.768
44	0.798	89	0.907	134	0.916	179	0.837	224	0.423	269	0.634	314	0.570	359	0.768



Proposal Number **78645**
Date **9-Feb-04**
Call Letters **WYNZ**
Location **Westbrook, ME**
Customer **Bromo Communications**
Antenna Type **DCRM4FE75D**
Frequency **100.90 MHz**
Drawing #: **25**

TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	Power kW
0	0.943	13.470	22.231
10	0.945	13.488	22.326
20	0.913	13.189	20.839
30	0.890	12.967	19.803
40	0.881	12.879	19.404
50	0.868	12.750	18.836
60	0.863	12.700	18.619
70	0.883	12.899	19.492
80	0.907	13.132	20.566
90	0.899	13.055	20.205
100	0.872	12.790	19.010
110	0.832	12.382	17.306
120	0.807	12.117	16.281
130	0.787	11.899	15.484
140	0.789	11.921	15.563
150	0.778	11.799	15.132
160	0.782	11.844	15.288
170	0.793	11.965	15.721
180	0.782	11.844	15.288
190	0.733	11.281	13.432
200	0.657	10.331	10.791
210	0.567	9.051	8.037
220	0.470	7.421	5.523
230	0.362	5.154	3.276
240	0.295	3.376	2.176
250	0.282	2.984	1.988
260	0.276	2.798	1.904
270	0.280	2.923	1.960
280	0.310	3.807	2.403
290	0.381	5.598	3.629
300	0.499	7.941	6.225
310	0.637	10.062	10.144
320	0.771	11.720	14.861
330	0.846	12.527	17.893
340	0.885	12.918	19.581
350	0.920	13.255	21.160

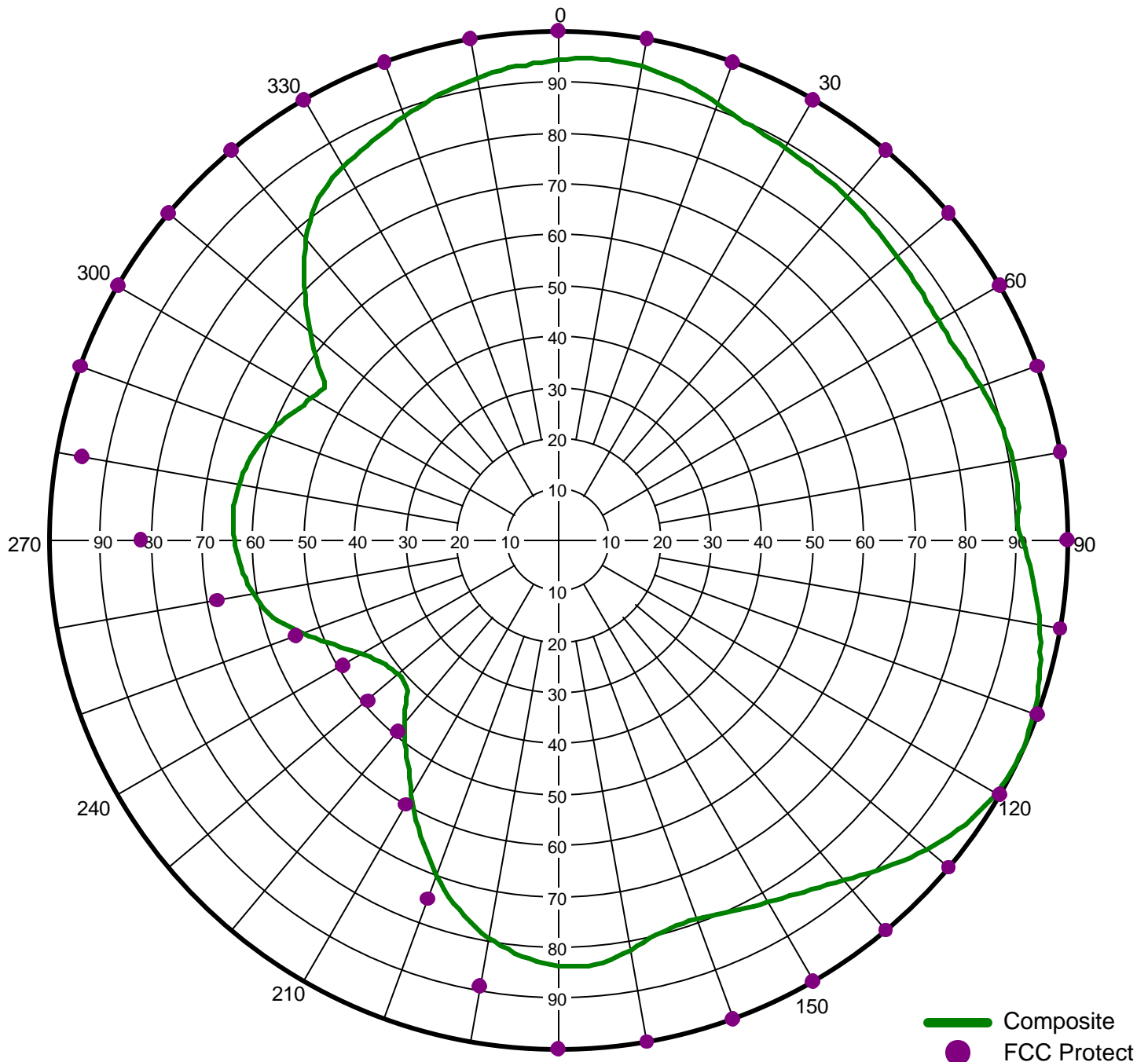


Proposal Number **78645**
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Antenna Type **DCRM4EFE75D**

AZIMUTH PATTERN

86.2% Ccov - 50.3% Hrms - 49.7% Vrms

Gain	1.78 (2.5) HPOL 1.64 (2.15) VPOL	Frequency	100.9
Calculated / Measured	Measured	Drawing #	25





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Customer	Bromo Communications
Antenna Type	DCRM4FE75D
Frequency	100.90 MHz
Drawing #:	25

TABULATION OF COMPOSITE AZIMUTH PATTERN

Angle	Field	dBk	Power kW	Input Power
0	0.943	13.470	22.231	25.000
10	0.945	13.488	22.326	25.000
20	0.913	13.189	20.839	25.000
30	0.890	12.967	19.803	25.000
40	0.881	12.879	19.404	25.000
50	0.868	12.750	18.836	25.000
60	0.863	12.700	18.619	25.000
70	0.883	12.899	19.492	25.000
80	0.907	13.132	20.566	25.000
90	0.912	13.179	20.794	25.000
100	0.959	13.616	22.992	25.000
110	0.994	13.927	24.701	25.000
120	0.994	13.927	24.701	25.000
130	0.945	13.488	22.326	25.000
140	0.873	12.800	19.053	25.000
150	0.822	12.277	16.892	25.000
160	0.793	11.965	15.721	25.000
170	0.817	12.224	16.687	25.000
180	0.836	12.424	17.472	25.000
190	0.792	11.954	15.682	25.000
200	0.701	10.894	12.285	25.000
210	0.577	9.203	8.323	25.000
220	0.470	7.421	5.523	25.000
230	0.410	6.235	4.203	25.000
240	0.447	6.986	4.995	25.000
250	0.536	8.563	7.182	25.000
260	0.609	9.672	9.272	25.000
270	0.636	10.049	10.112	25.000
280	0.637	10.062	10.144	25.000
290	0.607	9.643	9.211	25.000
300	0.558	8.912	7.784	25.000
310	0.637	10.062	10.144	25.000
320	0.771	11.720	14.861	25.000
330	0.846	12.527	17.893	25.000
340	0.885	12.918	19.581	25.000
350	0.920	13.255	21.160	25.000



Proposal Number	78645
Date	Feb 09, 2004
Call Letters	WYNZ
Location	Westbrook, ME
Customer	Bromo Communications
Antenna Type	DCRM4FE75D
Frequency	100.90 MHz
Drawing #	25

CUSTOMER GAIN SUMMARY

Azimuth Pattern Gain of Horizontal Polarization	1.78
Elevation Pattern Gain Per Polarization	1.80
Peak Gain at Horizontal Polarization	3.20



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Drawing #	

ELEVATION PATTERN

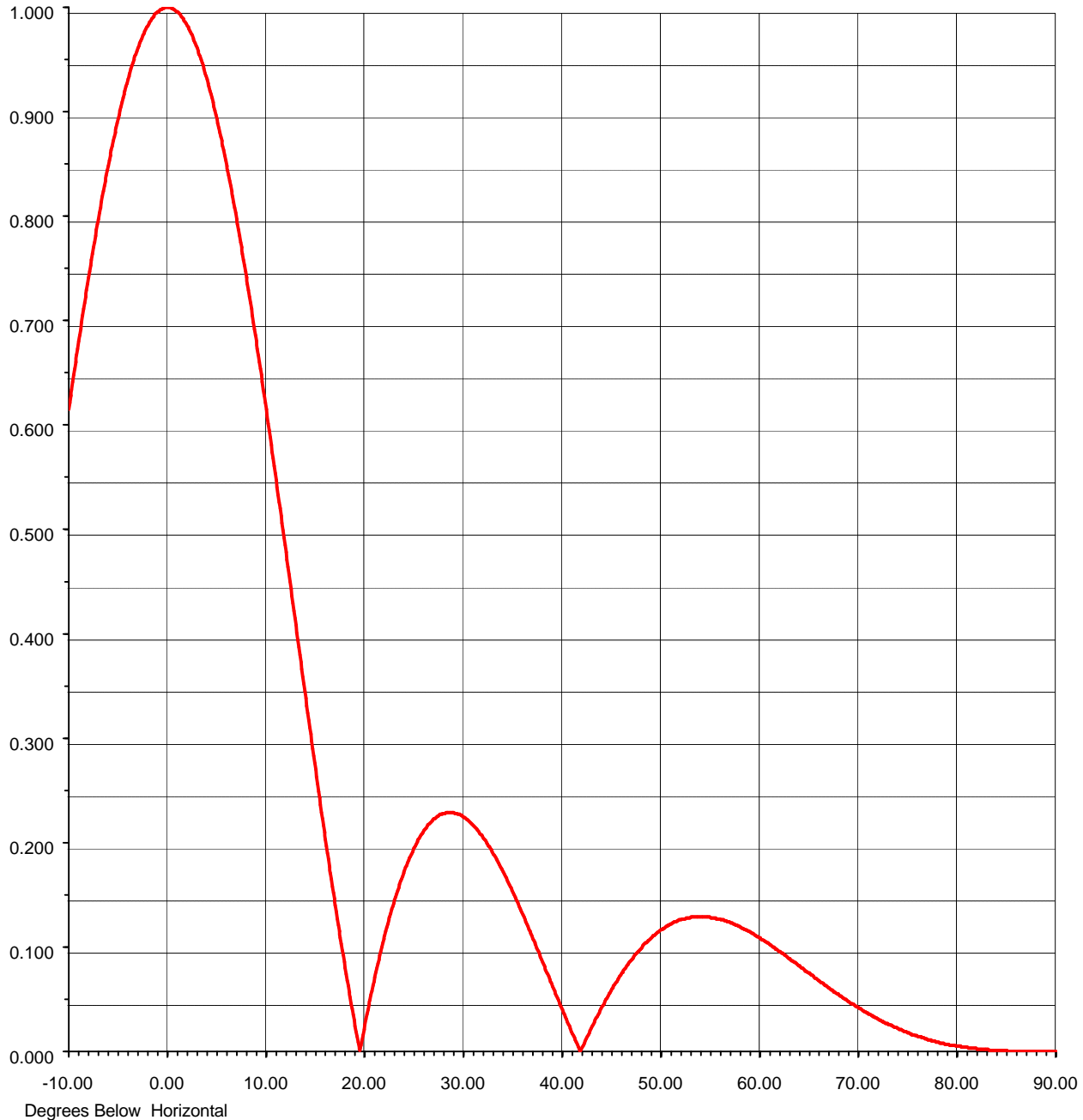
RMS Gain at Main Lobe **1.80**

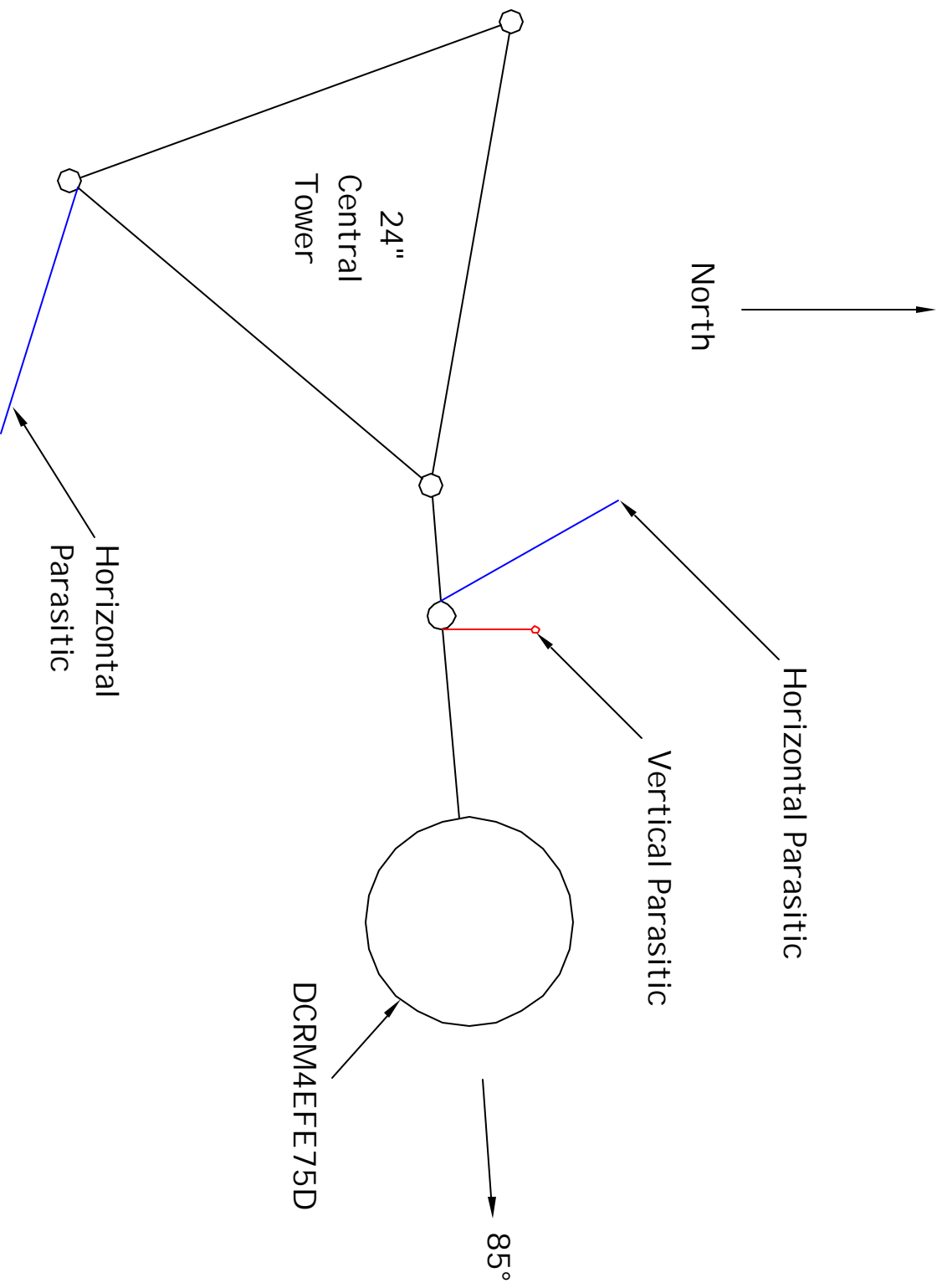
Per Polarization

Calculated / Measured **Calculated**

Beam Tilt **0.00 deg**

Frequency **100.90 MHz**





WYNZ - 100.9
 Document Sketch # 25
 Leg azimuths @ 70°, 190°, 310°

Dielectric