



WFSF

Marion, South Carolina

Antenna Pattern Certification



PATTERN CERTIFICATION

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A Unit of SPX Corporation

PATTERN CERTIFICATION

Method of Measurement

The azimuth pattern for "WFSF", Dielectric Document Sketch # 35, 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 # 30. 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 8711A network analyzer was used to supply the RF signal 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 to 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

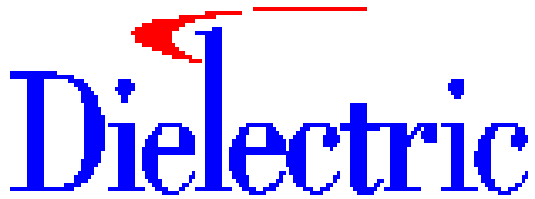
Manuel J. Sone is an Assistant Principal Engineer here at Dielectric. He received a B.Sc. in Electrical Engineering from the Universidad Nacional Pedro Henriquez Urefia in Dominican Republic in 1983 and a Masters Degree in Electrical Engineering from Polytechnic University, Brooklyn, N.Y. in 1990. He has over 13 years of experience in R.F. engineering and broadcast technology and has been employed by Dielectric Communications since early 1997.

Signed by: 

Date: 07/12/02

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Proposal Number **72447**
Date **Jul 12, 2002**
Call Letters **WFSF**
Location **Marion, SC**
Customer **Gary Kline**
Antenna Type **DCRM4E5**

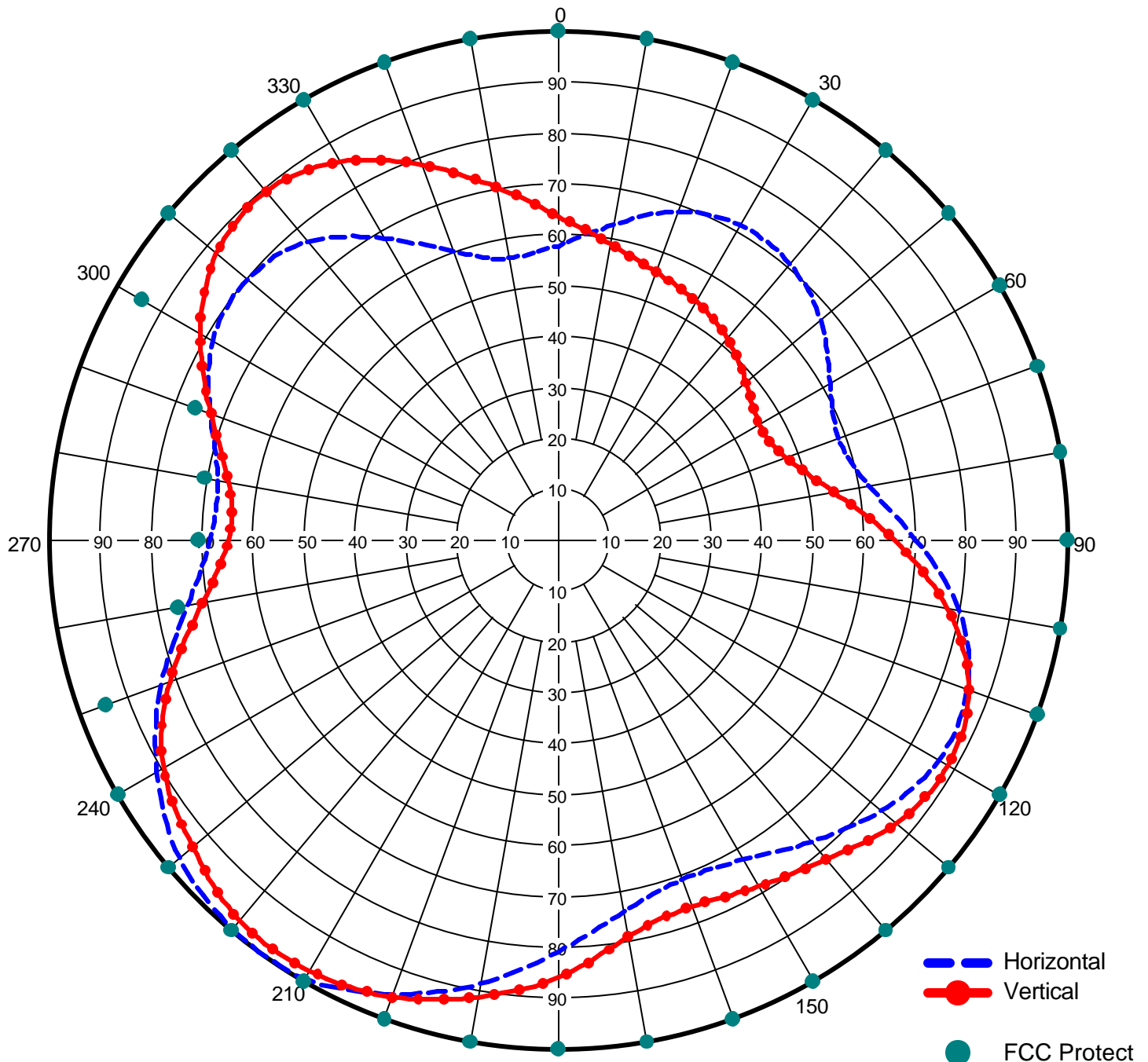
AZIMUTH PATTERN

81.9% Ccov - 50.0% Hrms - 50.0% Vrms

Calculated / Measured

Measured

Frequency **100.5**
Drawing # **35**



Proposal Number **72447**
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 Antenna Type **DCRM4E5**
 Frequency **100.50 MHz**
 Drawing #: **35**

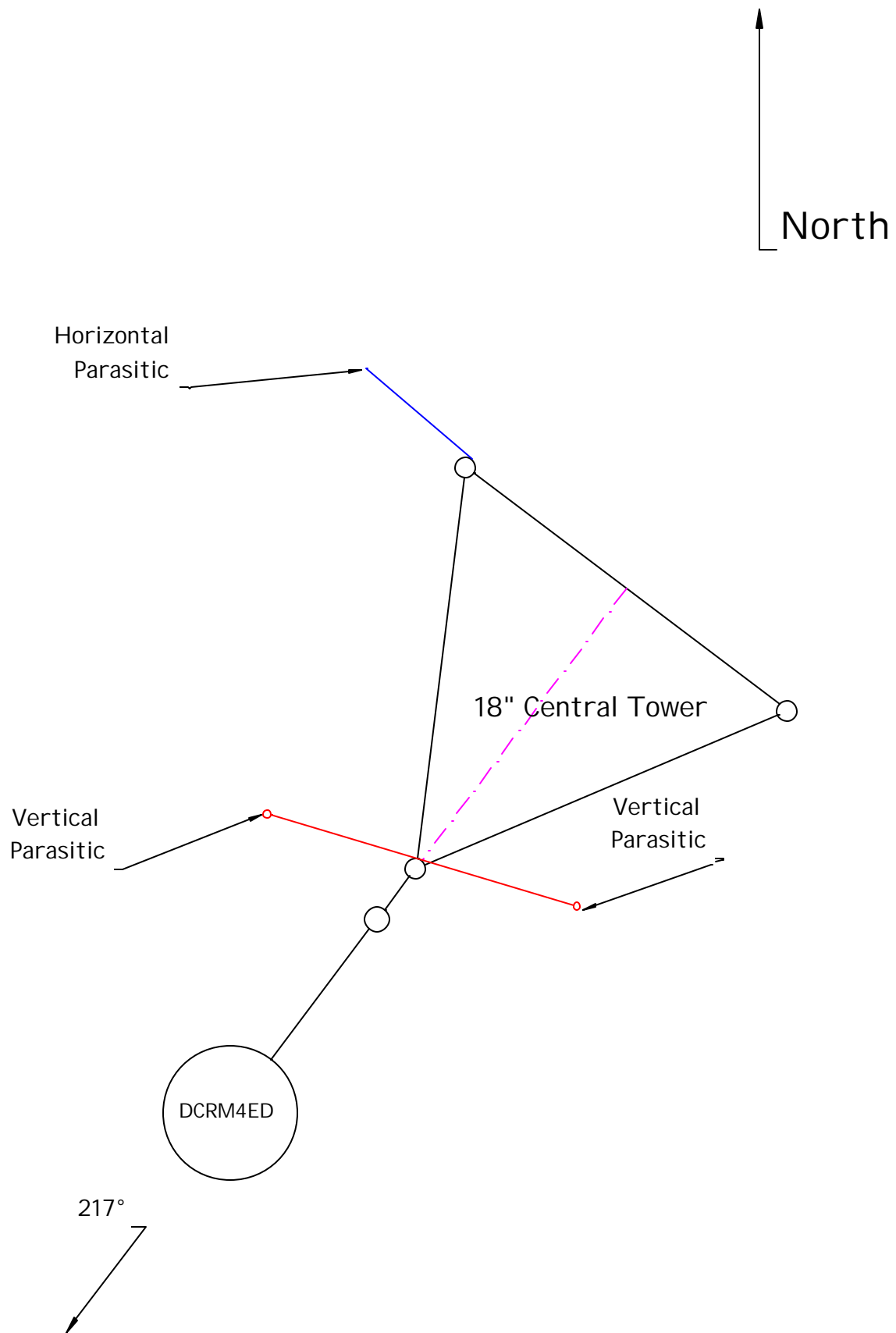
TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	dBk	Power kW
0	0.577	9.203	8.323
10	0.635	10.035	10.081
20	0.692	10.782	11.972
30	0.715	11.066	12.781
40	0.705	10.943	12.426
50	0.667	10.462	11.122
60	0.611	9.700	9.333
70	0.586	9.337	8.585
80	0.625	9.897	9.766
90	0.713	11.041	12.709
100	0.807	12.117	16.281
110	0.857	12.639	18.361
120	0.862	12.690	18.576
130	0.822	12.277	16.892
140	0.768	11.687	14.746
150	0.722	11.150	13.032
160	0.711	11.017	12.638
170	0.747	11.446	13.950
180	0.816	12.213	16.646
190	0.893	12.996	19.936
200	0.955	13.579	22.801
210	0.997	13.953	24.850
220	0.995	13.936	24.751
230	0.966	13.679	23.329
240	0.903	13.093	20.385
250	0.821	12.266	16.851
260	0.731	11.258	13.359
270	0.681	10.642	11.594
280	0.682	10.655	11.628
290	0.734	11.293	13.469
300	0.787	11.899	15.484
310	0.796	11.998	15.840
320	0.759	11.584	14.402
330	0.675	10.565	11.391
340	0.597	9.499	8.910
350	0.562	8.974	7.896

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TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	Power kW
0	0.634	10.021	10.049
10	0.586	9.337	8.585
20	0.558	8.912	7.784
30	0.539	8.611	7.263
40	0.514	8.199	6.605
50	0.478	7.568	5.712
60	0.455	7.140	5.176
70	0.479	7.586	5.736
80	0.558	8.912	7.784
90	0.672	10.527	11.290
100	0.786	11.888	15.445
110	0.863	12.700	18.619
120	0.884	12.908	19.536
130	0.862	12.690	18.576
140	0.814	12.192	16.565
150	0.783	11.855	15.327
160	0.766	11.664	14.669
170	0.798	12.019	15.920
180	0.866	12.730	18.749
190	0.916	13.217	20.976
200	0.958	13.607	22.944
210	0.978	13.786	23.912
220	0.973	13.742	23.668
230	0.934	13.386	21.809
240	0.889	12.957	19.758
250	0.802	12.063	16.080
260	0.701	10.894	12.285
270	0.646	10.184	10.433
280	0.663	10.410	10.989
290	0.735	11.305	13.506
300	0.820	12.256	16.810
310	0.880	12.869	19.360
320	0.892	12.987	19.892
330	0.852	12.588	18.148
340	0.777	11.788	15.093
350	0.694	10.807	12.041



WFSF - 100.5

Document Sketch # 35

Leg Azimuths @ 97°, 217°, 337°

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CUSTOMER GAIN SUMMARY

Azimuth Pattern Gain of Horizontal Polarization	1.71
Elevation Pattern Gain Per Polarization	1.30
Peak Gain at Horizontal Polarization	2.22

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MEASURED ELEVATION PATTERN

RMS Gain at Main Lobe **1.30 (1.14 dB)**
Per Polarization

Beam Tilt **0.00 deg**
Frequency **100.50 MHz**
Plane **Typical**

