



## **PATTERN CERTIFICATION**

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## **PATTERN CERTIFICATION**

### **Method of Measurement**

The azimuth pattern for "WLTY", Dielectric Document Sketch #P17, was measured in the following manner.

A single 4.4 to 1 scale model "DCRH6E5RD" 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 #P17. 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 L. Pelletier

Date: 8/2/05



**MSO NO: 82855**

**DATE: August 2, 2005**

**PATTERN NO: P17**

**FM AZIMUTH PATTERN APPROVAL**

The azimuth pattern of the horizontal polarization and vertical polarization as supplied by Dielectric in the document labeled “ Pattern P17 ”, 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: \_\_\_\_\_

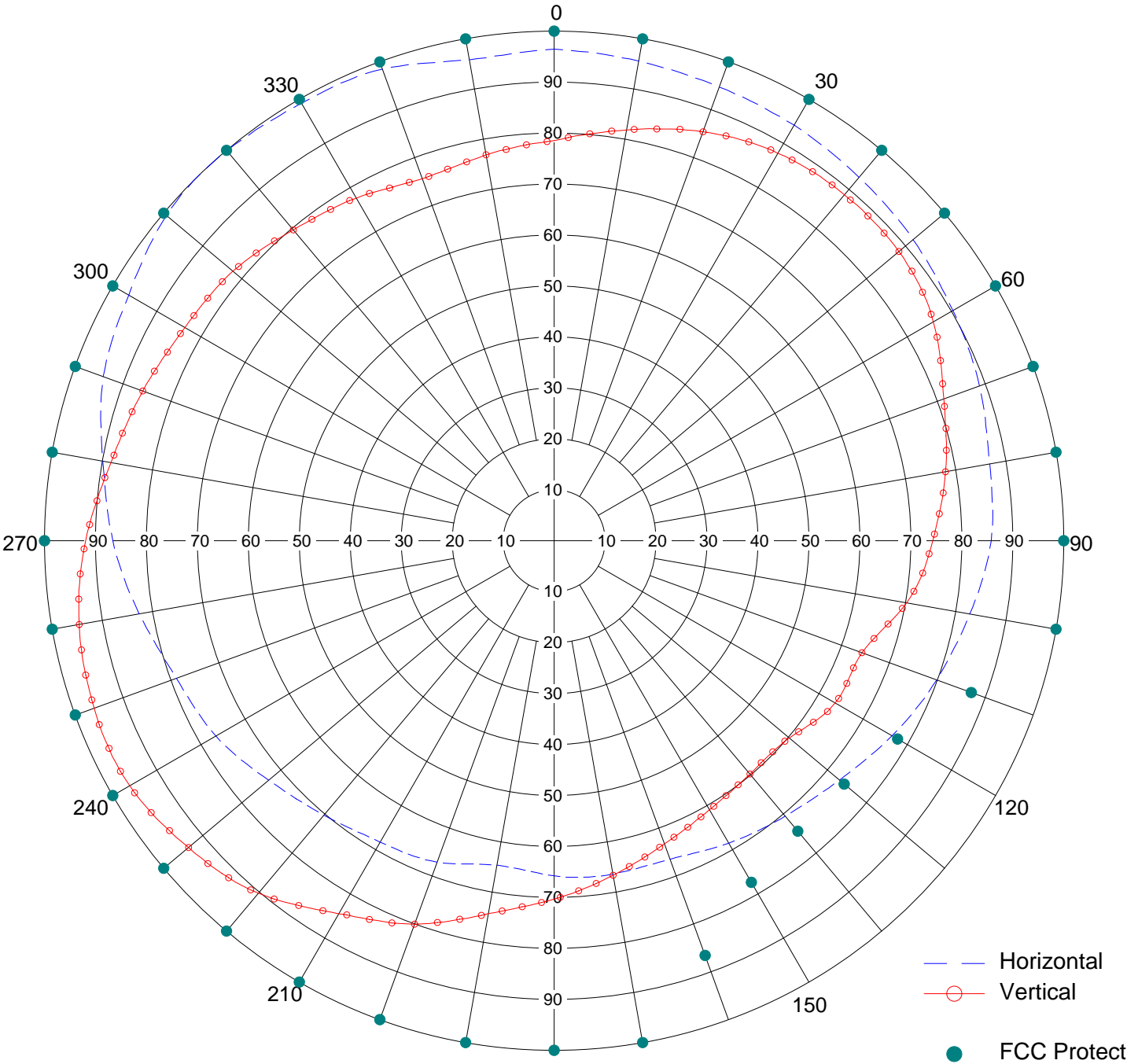
\_\_\_\_\_  
(Signature)

Proposal Number **82855** Revision **3**  
Date **Aug 2, 2005**  
Call Letters **WLTY**  
Location **Cayce, SC**  
Customer **Clear Channel**  
Antenna Type **DCRH6E5RD**

**AZIMUTH PATTERN**

Ccov - 90.8% - 51.3% H - 48.7% V

Gain **1.4 (1.46) HPOL 1.45 (1.61) VPOL** Frequency **96.7 MHz**  
Calculated / Measured **Measured** Drawing # **P17**





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 Location **Cayce, SC**  
 Customer **Clear Channel**  
 Antenna Type **DCRH6E5RD**  
 Frequency **96.70 MHz**  
 Drawing #: **P17**

## TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
0	0.965	9.233	8.381
10	0.956	9.152	8.225
20	0.947	9.069	8.071
30	0.942	9.023	7.986
40	0.931	8.921	7.801
50	0.919	8.809	7.601
60	0.904	8.666	7.355
70	0.888	8.511	7.097
80	0.868	8.313	6.781
90	0.858	8.212	6.625
100	0.828	7.903	6.170
110	0.799	7.593	5.746
120	0.765	7.216	5.267
130	0.731	6.821	4.809
140	0.705	6.506	4.473
150	0.685	6.256	4.223
160	0.665	5.999	3.980
170	0.664	5.986	3.968
180	0.658	5.907	3.897
190	0.646	5.747	3.756
200	0.671	6.077	4.052
210	0.683	6.231	4.198
220	0.703	6.482	4.448
230	0.731	6.821	4.809
240	0.766	7.227	5.281
250	0.789	7.484	5.603
260	0.827	7.893	6.155
270	0.866	8.293	6.750
280	0.899	8.618	7.274
290	0.942	9.023	7.986
300	0.964	9.224	8.364
310	0.993	9.481	8.874
320	0.999	9.534	8.982
330	0.992	9.473	8.857
340	0.985	9.411	8.732
350	0.958	9.170	8.260



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## TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
0	0.785	7.440	5.546
10	0.818	7.797	6.022
20	0.854	8.172	6.564
30	0.878	8.412	6.938
40	0.886	8.491	7.065
50	0.883	8.462	7.017
60	0.859	8.222	6.641
70	0.814	7.755	5.963
80	0.780	7.384	5.476
90	0.743	6.962	4.968
100	0.702	6.469	4.435
110	0.643	5.707	3.721
120	0.637	5.625	3.652
130	0.603	5.149	3.272
140	0.598	5.076	3.218
150	0.610	5.249	3.349
160	0.633	5.570	3.606
170	0.667	6.025	4.004
180	0.703	6.482	4.448
190	0.743	6.962	4.968
200	0.801	7.615	5.774
210	0.845	8.080	6.426
220	0.903	8.656	7.339
230	0.936	8.968	7.885
240	0.962	9.206	8.329
250	0.961	9.197	8.312
260	0.946	9.060	8.054
270	0.919	8.809	7.601
280	0.883	8.462	7.017
290	0.859	8.222	6.641
300	0.837	7.997	6.305
310	0.823	7.850	6.096
320	0.796	7.561	5.703
330	0.776	7.340	5.420
340	0.756	7.113	5.144
350	0.769	7.261	5.322



Proposal Number	82855	Revision:	3
Date	Aug 02, 2005		
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### COMPOSITE AZIMUTH PATTERN

Calculated / Measured

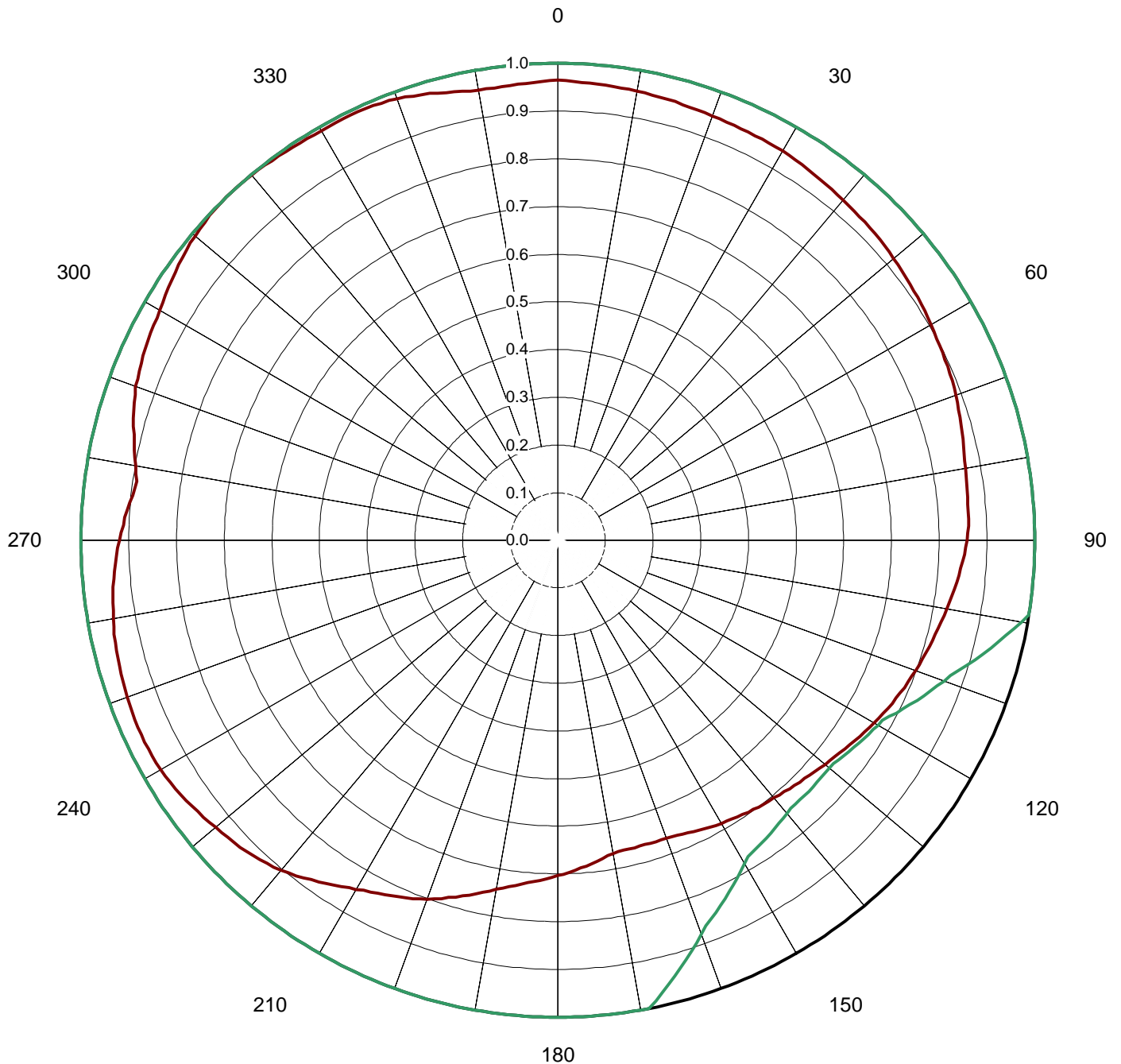
**Measured**

Frequency

**96.70 MHz**

Drawing #

**P17**





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Antenna Type	<b>DCRH6E5RD</b>
Frequency	<b>96.70 MHz</b>
Drawing #:	<b>P17</b>

## TABULATION OF COMPOSITE AZIMUTH PATTERN

Angle	Field	dBk	Power kW	Input Power
0	0.965	9.233	8.381	9.000
10	0.956	9.152	8.225	9.000
20	0.947	9.069	8.071	9.000
30	0.942	9.023	7.986	9.000
40	0.931	8.921	7.801	9.000
50	0.919	8.809	7.601	9.000
60	0.904	8.666	7.355	9.000
70	0.888	8.511	7.097	9.000
80	0.868	8.313	6.781	9.000
90	0.858	8.212	6.625	9.000
100	0.828	7.903	6.170	9.000
110	0.799	7.593	5.746	9.000
120	0.765	7.216	5.267	9.000
130	0.731	6.821	4.809	9.000
140	0.705	6.506	4.473	9.000
150	0.685	6.256	4.223	9.000
160	0.665	5.999	3.980	9.000
170	0.667	6.025	4.004	9.000
180	0.703	6.482	4.448	9.000
190	0.743	6.962	4.968	9.000
200	0.801	7.615	5.774	9.000
210	0.845	8.080	6.426	9.000
220	0.903	8.656	7.339	9.000
230	0.936	8.968	7.885	9.000
240	0.962	9.206	8.329	9.000
250	0.961	9.197	8.312	9.000
260	0.946	9.060	8.054	9.000
270	0.919	8.809	7.601	9.000
280	0.899	8.618	7.274	9.000
290	0.942	9.023	7.986	9.000
300	0.964	9.224	8.364	9.000
310	0.993	9.481	8.874	9.000
320	0.999	9.534	8.982	9.000
330	0.992	9.473	8.857	9.000
340	0.985	9.411	8.732	9.000
350	0.958	9.170	8.260	9.000





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Frequency	<b>96.70 MHz</b>
Drawing #	<b>P17</b>

## **CUSTOMER GAIN SUMMARY**

<b>Azimuth Pattern Gain of Horizontal Polarization</b>	<b>1.40</b>	<b>(1.46 dB)</b>
<b>Elevation Pattern Gain Per Polarization</b>	<b>1.80</b>	<b>(2.55 dB)</b>
<b>Peak Gain at Horizontal Polarization</b>	<b>2.52</b>	<b>(4.01 dB)</b>

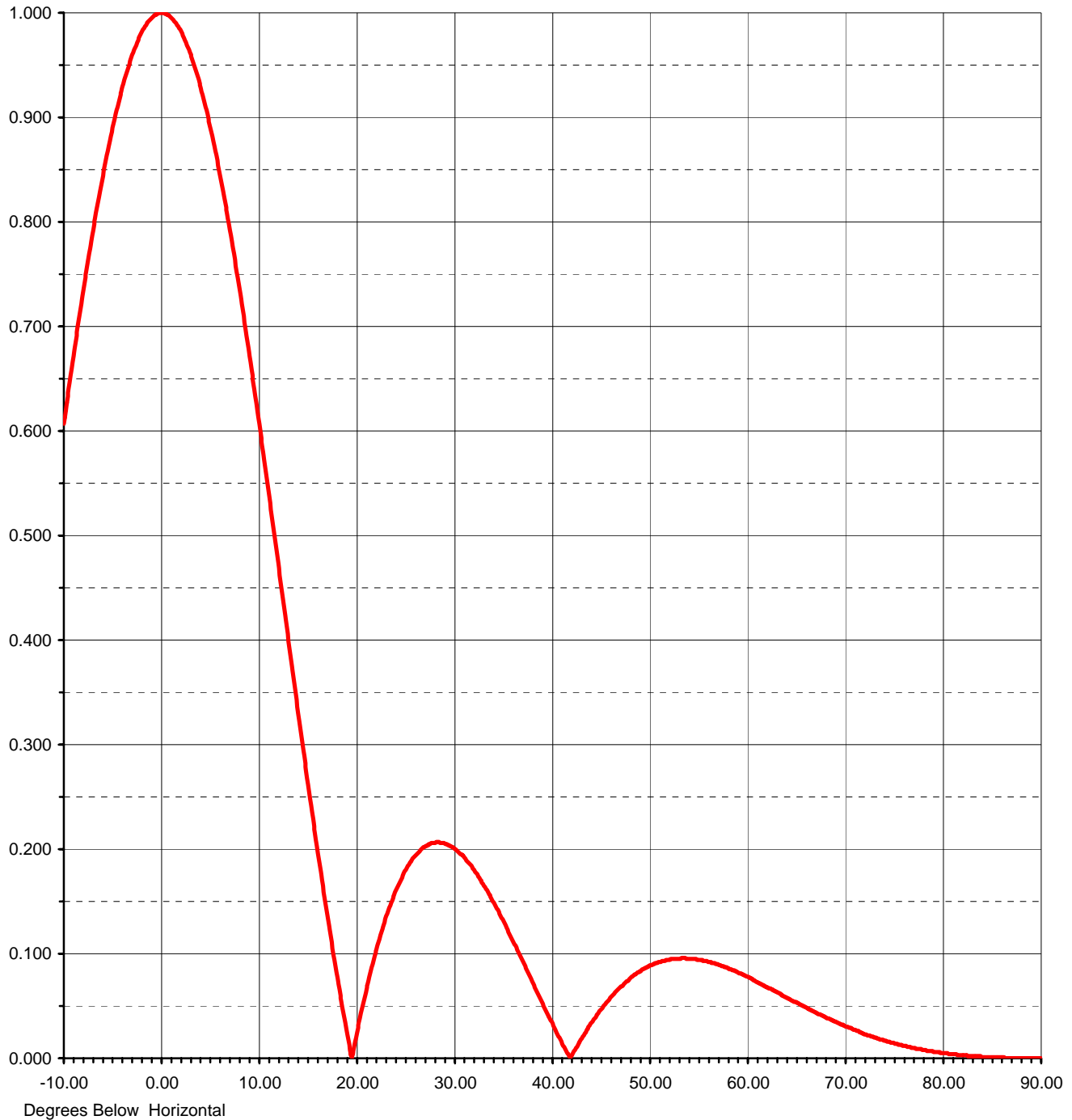


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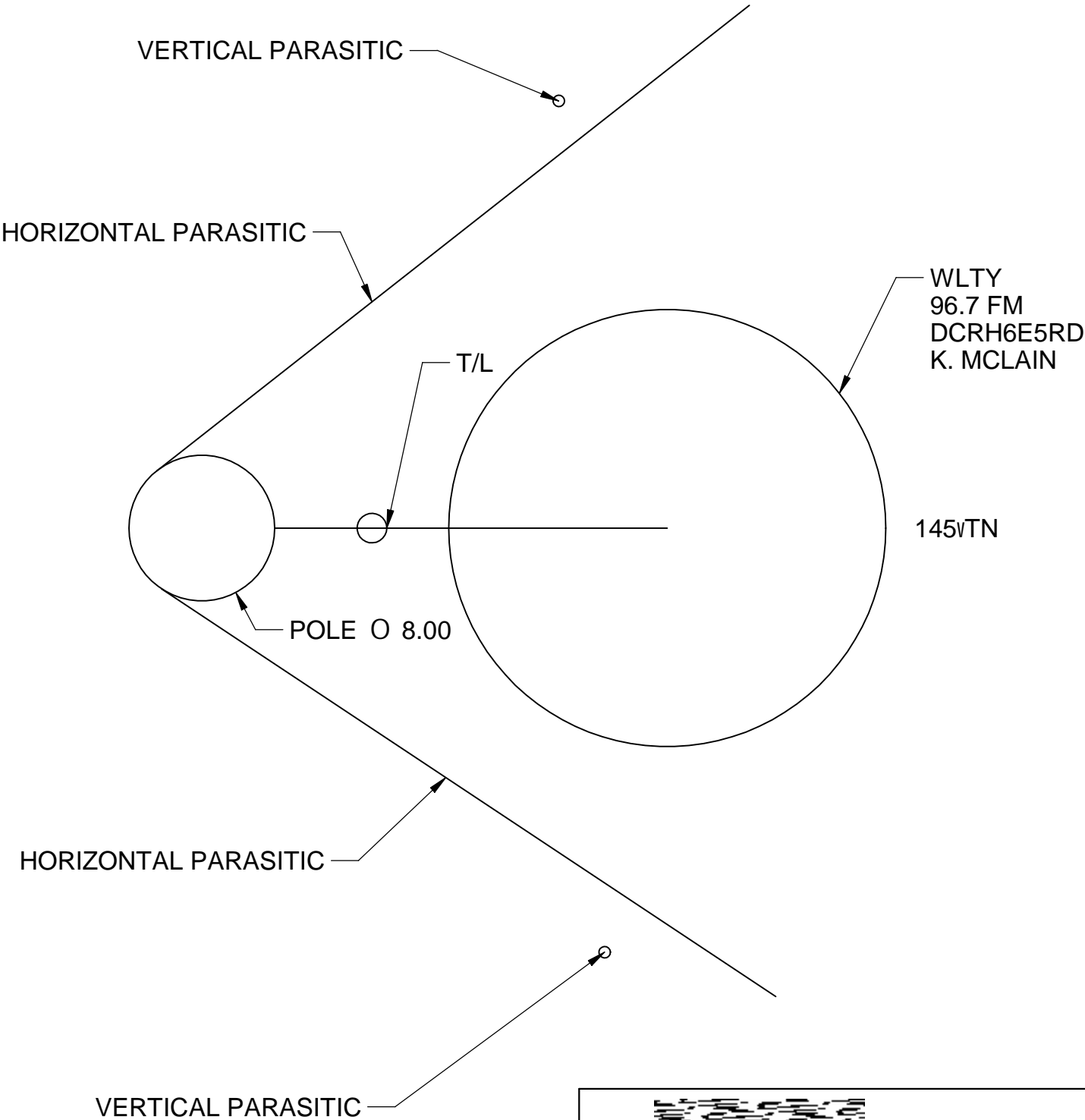
## ELEVATION PATTERN


RMS Gain at Main Lobe **1.80 ( 2.55 dB )**  
Per Polarization  
Calculated / Measured **Calculated**

Beam Tilt **0.00 deg**  
Frequency **96.70 MHz**



REV:	<b>REVISION NOTE</b> CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.
<b>A</b>	SEE SHEET #1



		Raymond, ME	
A Unit of SPX Corporation			
A	GAGE CODE	DRAWING NO:	
	08441		
		SHEET: 1 OF 1	