



Date
Call Letters
Location

5/26/2015
KYSR
Mt. Wilson, CA

Antenna Type
Frequency
Drawing #

DCRM4E50P
98.7

PATTERN CERTIFICATION

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PATTERN CERTIFICATION

Method of Measurement

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

A single 4.4 to 1 scale model "DCRM4E50P" 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 #. 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 8753ET 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

Nicole Curtis Bray is a Electrical Engineer here at Dielectric. She received a BS in Electrical Engineering from the University of Maine in 2014. She has over 1 year(s) experience in RF antenna engineering and has been employed by Dielectric since 2014.

Signed by: _____

Date: 5/26/15

A handwritten signature in black ink, appearing to be "NCB", written over a horizontal line.



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FM AZIMUTH PATTERN APPROVAL

The azimuth pattern of the horizontal polarization and vertical polarization as supplied by Dielectric in the document labeled "Pattern ", 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)



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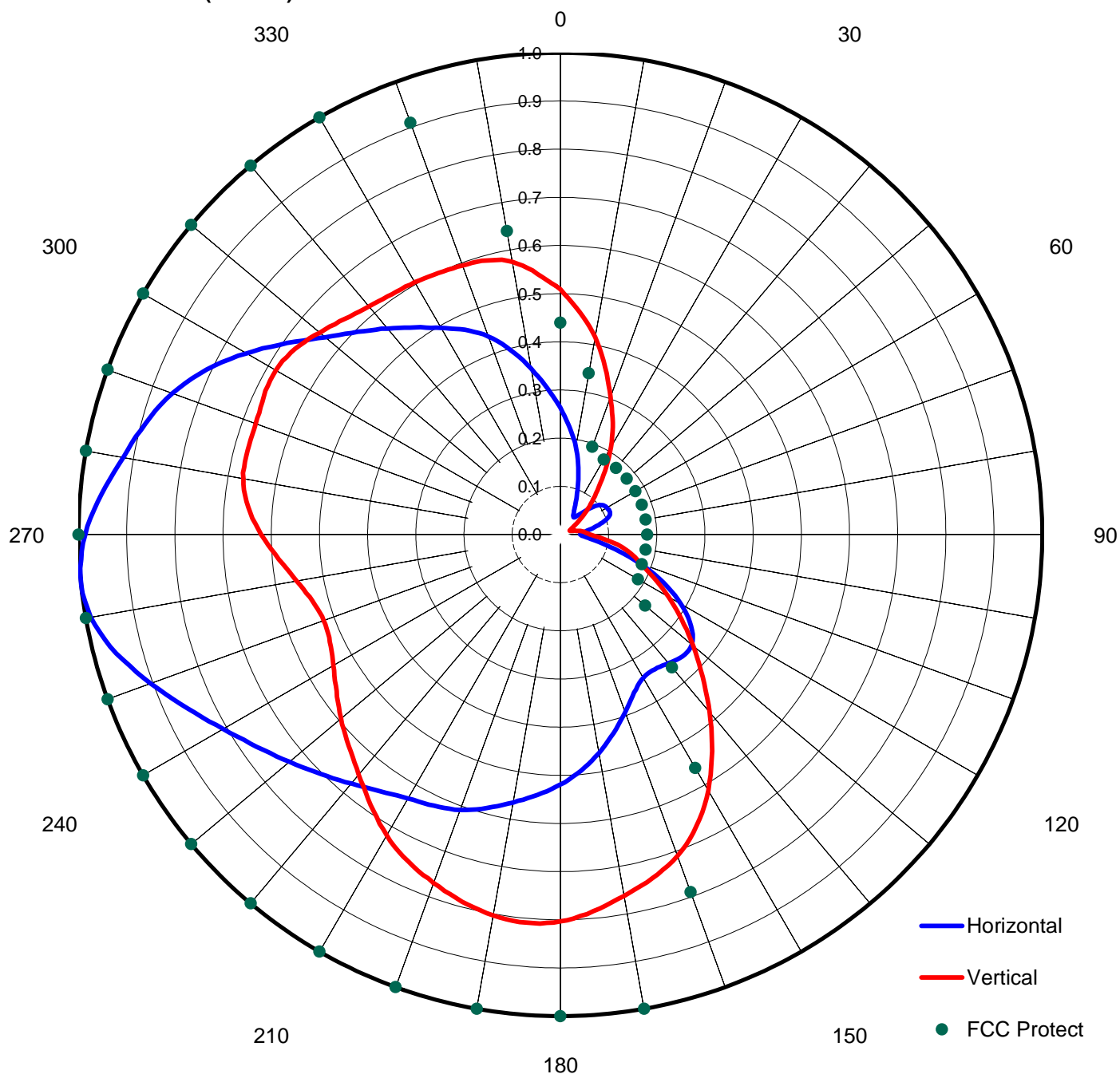
AZIMUTH PATTERN

85.7% Ccov 50% Hrms - 50% Vrms

Gain 3.53 (5.48 dB) HPOL
2.31 (3.64 dB) VPOL

Calculated / Measured

Measured





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TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
	0.263	-4.611	0.346
10	0.185	-7.667	0.171
20	0.106	-12.504	0.056
30	0.057	-17.893	0.016
40	0.047	-19.568	0.011
50	0.090	-13.925	0.041
60	0.111	-12.104	0.062
70	0.106	-12.504	0.056
80	0.064	-16.887	0.020
90	0.041	-20.755	0.008
100	0.074	-15.626	0.027
110	0.175	-8.150	0.153
120	0.289	-3.792	0.418
130	0.356	-1.981	0.634
140	0.349	-2.154	0.609
150	0.344	-2.279	0.592
160	0.393	-1.122	0.772
170	0.461	0.264	1.063
180	0.519	1.293	1.347
190	0.565	2.031	1.596
200	0.609	2.682	1.854
210	0.633	3.018	2.003
220	0.675	3.576	2.278
230	0.734	4.304	2.694
240	0.808	5.138	3.264
250	0.905	6.123	4.095
260	0.990	6.902	4.901
270	0.986	6.867	4.861
280	0.921	6.275	4.241
290	0.857	5.649	3.672
300	0.752	4.514	2.828
310	0.637	3.072	2.029
320	0.558	1.922	1.557
330	0.495	0.882	1.225
340	0.437	-0.201	0.955
350	0.350	-2.129	0.613
Additional Point 264	1.000	6.990	5.000



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TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
	0.509	1.124	1.295
10	0.416	-0.628	0.865
20	0.304	-3.353	0.462
30	0.210	-6.566	0.221
40	0.120	-11.427	0.072
50	0.064	-16.887	0.020
60	0.030	-23.468	0.005
70	0.022	-26.162	0.002
80	0.042	-20.545	0.009
90	0.061	-17.304	0.019
100	0.120	-11.427	0.072
110	0.179	-7.953	0.160
120	0.259	-4.744	0.335
130	0.360	-1.884	0.648
140	0.482	0.651	1.162
150	0.614	2.753	1.885
160	0.710	4.015	2.521
170	0.762	4.629	2.903
180	0.803	5.084	3.224
190	0.803	5.084	3.224
200	0.770	4.720	2.965
210	0.721	4.148	2.599
220	0.651	3.261	2.119
230	0.594	2.465	1.764
240	0.544	1.702	1.480
250	0.523	1.360	1.368
260	0.556	1.891	1.546
270	0.621	2.852	1.928
280	0.668	3.485	2.231
290	0.673	3.550	2.265
300	0.682	3.665	2.326
310	0.652	3.275	2.126
320	0.618	2.809	1.910
330	0.605	2.625	1.830
340	0.594	2.465	1.764
350	0.575	2.183	1.653



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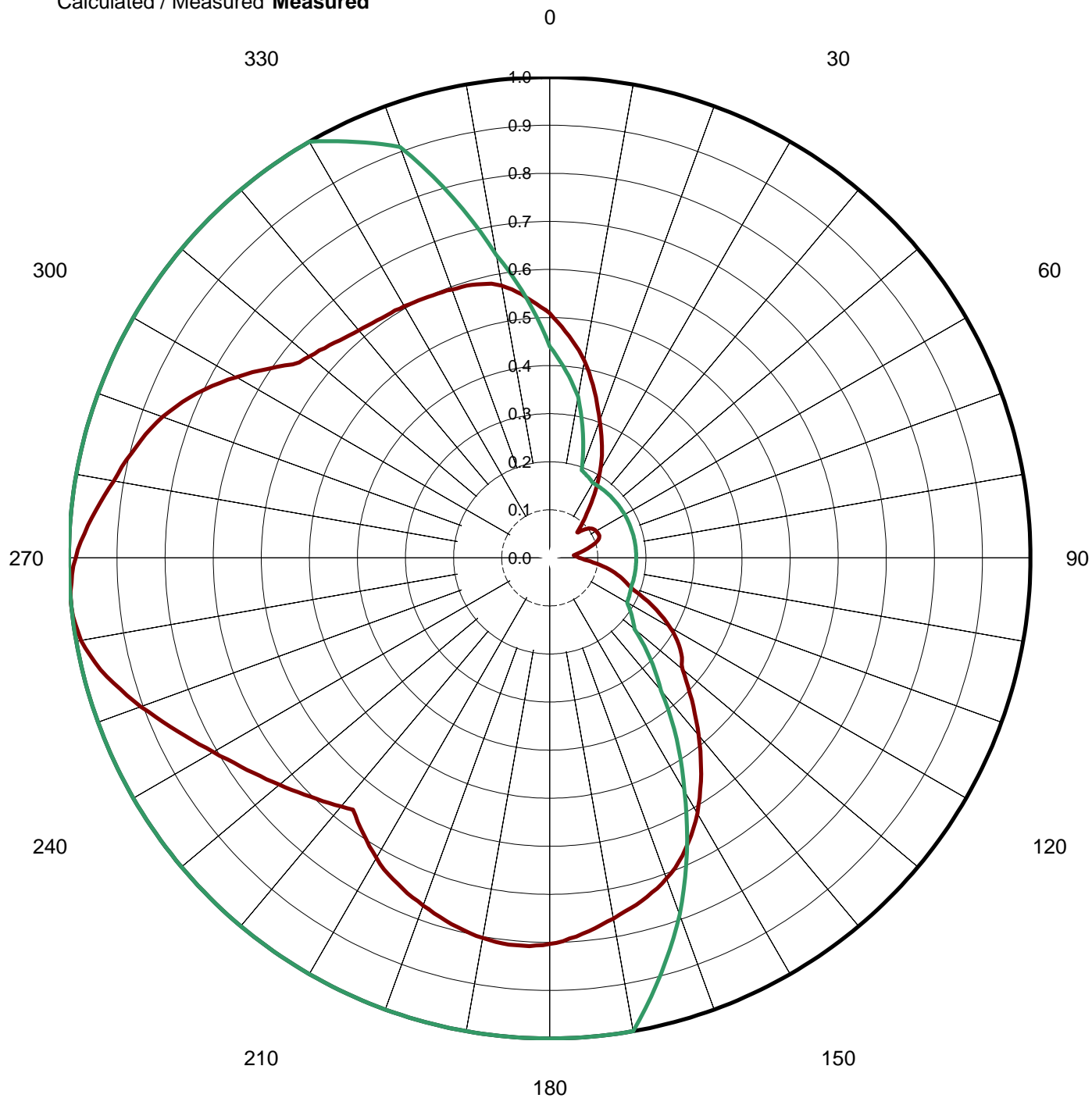
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COMPOSITE AZIMUTH PATTERN

Calculated / Measured **Measured**





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TABULATION OF COMPOSITE AZIMUTH PATTERN

Angle	Field	dBk	Power kW	Input Power
	0.509	1.124	1.295	5.000
10	0.416	-0.628	0.865	5.000
20	0.304	-3.353	0.462	5.000
30	0.210	-6.566	0.221	5.000
40	0.120	-11.427	0.072	5.000
50	0.090	-13.925	0.041	5.000
60	0.111	-12.104	0.062	5.000
70	0.106	-12.504	0.056	5.000
80	0.064	-16.887	0.020	5.000
90	0.061	-17.304	0.019	5.000
100	0.120	-11.427	0.072	5.000
110	0.179	-7.953	0.160	5.000
120	0.289	-3.792	0.418	5.000
130	0.360	-1.884	0.648	5.000
140	0.482	0.651	1.162	5.000
150	0.614	2.753	1.885	5.000
160	0.710	4.015	2.521	5.000
170	0.762	4.629	2.903	5.000
180	0.803	5.084	3.224	5.000
190	0.803	5.084	3.224	5.000
200	0.770	4.720	2.965	5.000
210	0.721	4.148	2.599	5.000
220	0.675	3.576	2.278	5.000
230	0.734	4.304	2.694	5.000
240	0.808	5.138	3.264	5.000
250	0.905	6.123	4.095	5.000
260	0.990	6.902	4.901	5.000
270	0.986	6.867	4.861	5.000
280	0.921	6.275	4.241	5.000
290	0.857	5.649	3.672	5.000
300	0.752	4.514	2.828	5.000
310	0.652	3.275	2.126	5.000
320	0.618	2.809	1.910	5.000
330	0.605	2.625	1.830	5.000
340	0.594	2.465	1.764	5.000
350	0.575	2.183	1.653	5.000
264	1.000	6.990	5.000	5.000

Additional Point



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CUSTOMER GAIN SUMMARY

Azimuth Pattern Gain of Horizontal Polarization	3.53 (5.48 dB)
Elevation Pattern Gain Per Polarization	1.30 (1.14 dB)
Peak Gain of Horizontal Polarization	4.59 (6.62 dB)



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ELEVATION PATTERN

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

Beam Tilt
Frequency **98.7 MHz**

