



Date
Call Letters
Location

7/14/2015
WMVY
Edgartown, MA

Antenna Type
Frequency
Drawing #

DCRH
88.7
P27

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



Date	7/14/2015
Call Letters	WMVY
Location	Edgartown, MA
Antenna Type	DCRH
Frequency	88.7
Drawing #	P27

PATTERN CERTIFICATION

Method of Measurement

The azimuth pattern for WMVY, Dielectric Document Sketch #P27, was measured in the following manner.

A single 4.4 to 1 scale model "DCRH" 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 #P27. 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:

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

Date:

7/14/15



Date
Call Letters
Location

7/14/2015
WMVY
Edgartown, MA

Antenna Type
Frequency
Drawing #

DCRH
88.7
P27

FM AZIMUTH PATTERN APPROVAL

The azimuth pattern of the horizontal polarization and vertical polarization as supplied by Dielectric in the document labeled "Pattern P27", 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)



Date
Call Letters
Location

7/14/2015
WMVY
Edgartown, MA

Antenna Type
Frequency
Drawing #

DCRH
88.7
P27

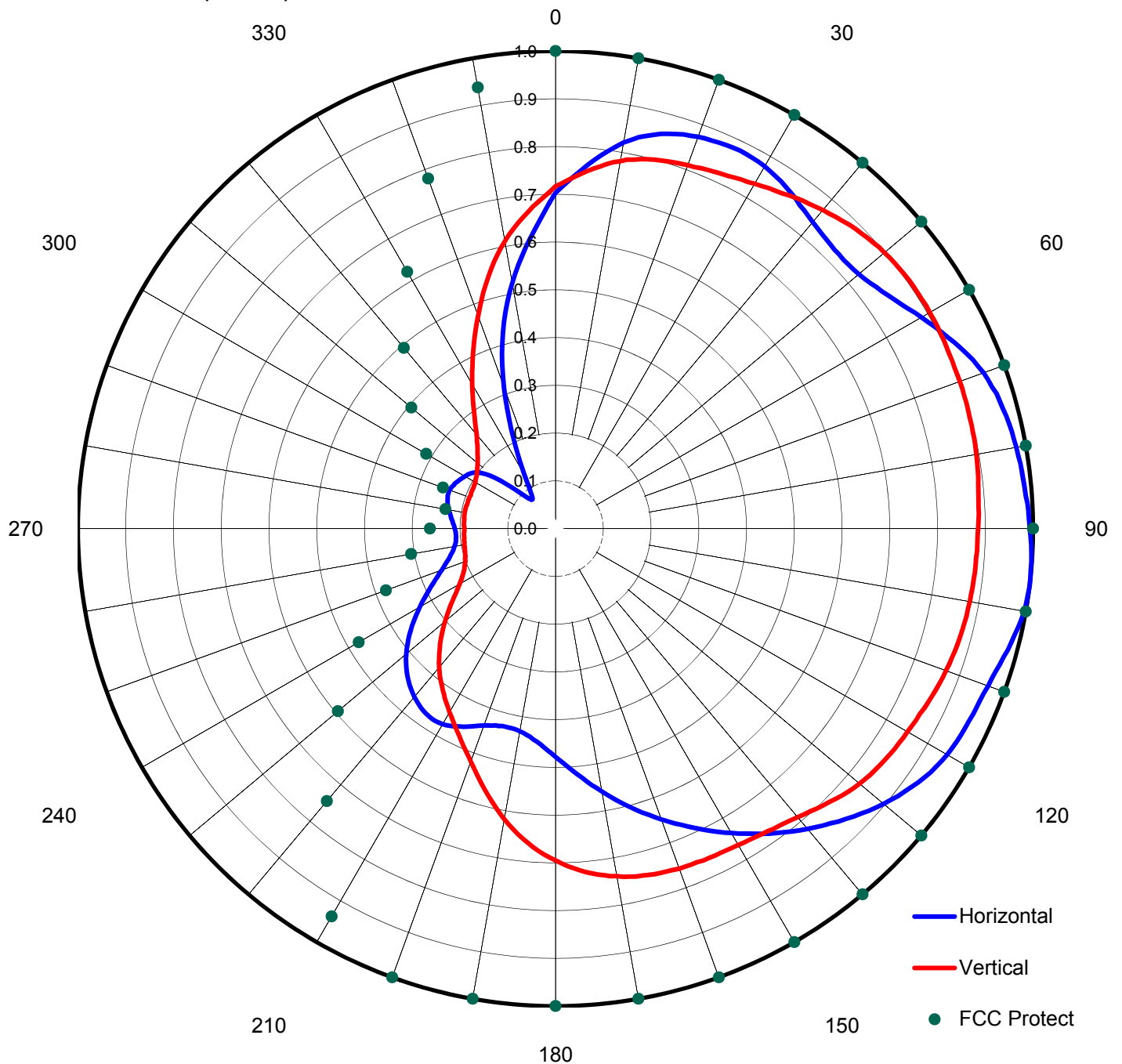
AZIMUTH PATTERN

81.02% Ccov 50.1% Hrms - 49.9% Vrms

Gain
2.35 (3.71 dB) HPOL
1.94 (2.88 dB) VPOL

Calculated / Measured

Measured





Date
Call Letters
Location

7/14/2015
WMVY
Edgartown, MA

Antenna Type
Frequency
Drawing #

DCRH
88.7
P27

TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
	0.703	7.908	6.178
10	0.821	9.256	8.426
20	0.873	9.789	9.527
30	0.876	9.819	9.592
40	0.838	9.434	8.778
50	0.829	9.340	8.591
60	0.885	9.908	9.790
70	0.954	10.560	11.376
80	0.980	10.794	12.005
90	0.993	10.908	12.326
100	0.997	10.943	12.425
110	0.964	10.651	11.616
120	0.947	10.496	11.210
130	0.897	10.025	10.058
140	0.821	9.256	8.426
150	0.736	8.307	6.771
160	0.648	7.201	5.249
170	0.559	5.917	3.906
180	0.478	4.558	2.856
190	0.431	3.659	2.322
200	0.439	3.818	2.409
210	0.473	4.466	2.797
220	0.460	4.224	2.645
230	0.408	3.182	2.081
240	0.328	1.287	1.345
250	0.253	-0.968	0.800
260	0.215	-2.382	0.578
270	0.211	-2.545	0.557
280	0.227	-1.910	0.644
290	0.236	-1.573	0.696
300	0.219	-2.222	0.600
310	0.165	-4.681	0.340
320	0.079	-11.078	0.078
330	0.131	-6.685	0.215
340	0.316	0.963	1.248
350	0.522	5.323	3.406
Additional Point 96	1.000	10.969	12.500



Date
Call Letters
Location

7/14/2015
WMVY
Edgartown, MA

Antenna Type
Frequency
Drawing #

DCRH
88.7
P27

TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
	0.717	8.079	6.426
10	0.781	8.822	7.625
20	0.810	9.139	8.201
30	0.834	9.392	8.694
40	0.871	9.769	9.483
50	0.899	10.044	10.103
60	0.905	10.102	10.238
70	0.901	10.064	10.148
80	0.895	10.006	10.013
90	0.885	9.908	9.790
100	0.881	9.869	9.702
110	0.870	9.759	9.461
120	0.851	9.568	9.053
130	0.831	9.361	8.632
140	0.789	8.911	7.782
150	0.765	8.642	7.315
160	0.758	8.562	7.182
170	0.739	8.342	6.827
180	0.695	7.809	6.038
190	0.618	6.789	4.774
200	0.519	5.272	3.367
210	0.444	3.917	2.464
220	0.379	2.542	1.796
230	0.302	0.569	1.140
240	0.232	-1.721	0.673
250	0.201	-2.967	0.505
260	0.194	-3.275	0.470
270	0.191	-3.410	0.456
280	0.193	-3.320	0.466
290	0.192	-3.365	0.461
300	0.194	-3.275	0.470
310	0.213	-2.463	0.567
320	0.257	-0.832	0.826
330	0.349	1.826	1.523
340	0.474	4.485	2.808
350	0.611	6.690	4.667



Date
Call Letters
Location

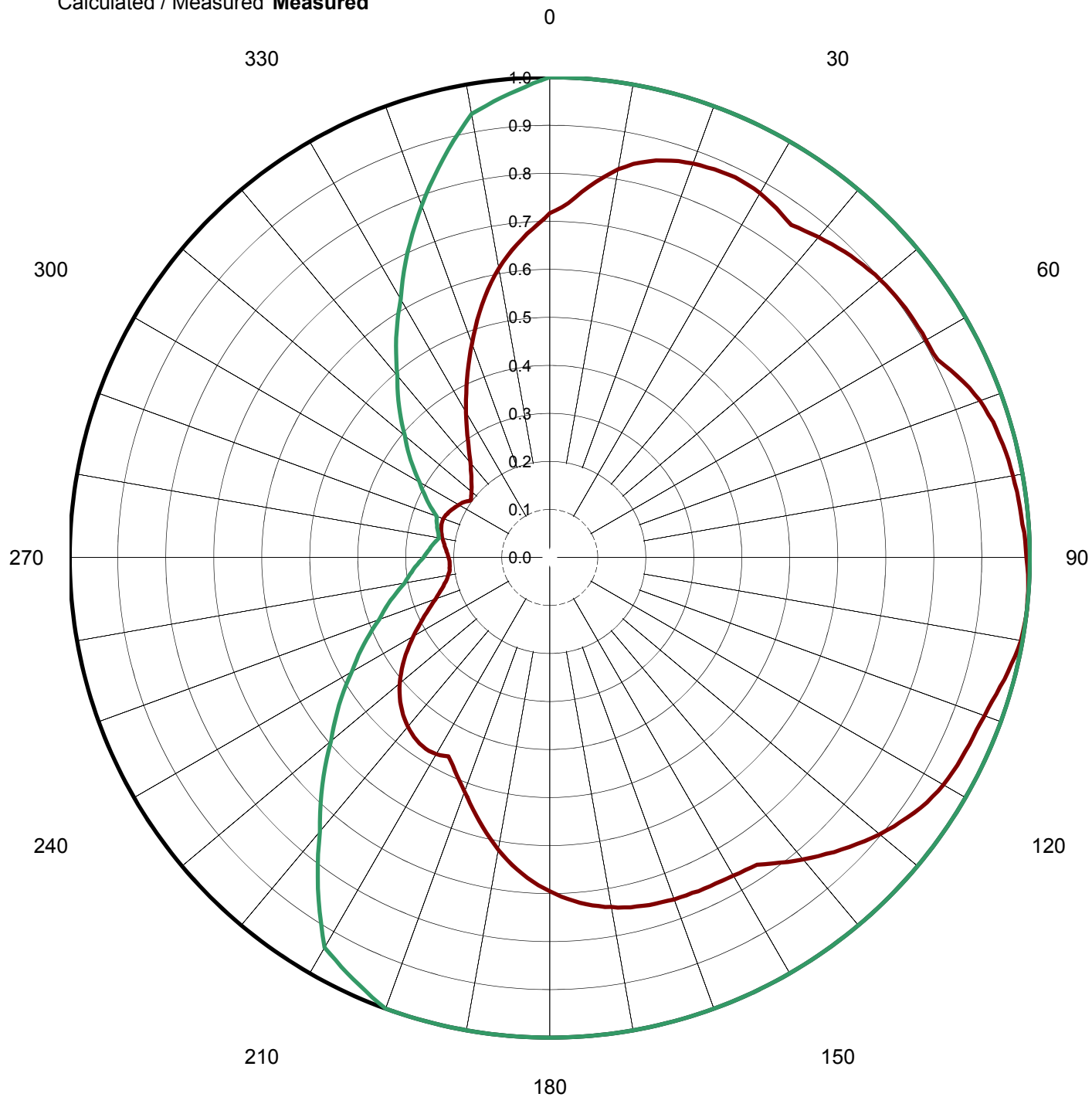
7/14/2015
WMVY
Edgartown, MA

Antenna Type
Frequency
Drawing #

DCRH
88.7
P27

COMPOSITE AZIMUTH PATTERN

Calculated / Measured **Measured**





Date	7/14/2015
Call Letters	WMVY
Location	Edgartown, MA
Antenna Type	DCRH
Frequency	88.7
Drawing #	P27

TABULATION OF COMPOSITE AZIMUTH PATTERN

Angle	Field	dBk	Power kW	Input Power
	0.717	8.079	6.426	12.500
10	0.821	9.256	8.426	12.500
20	0.873	9.789	9.527	12.500
30	0.876	9.819	9.592	12.500
40	0.871	9.769	9.483	12.500
50	0.899	10.044	10.103	12.500
60	0.905	10.102	10.238	12.500
70	0.954	10.560	11.376	12.500
80	0.980	10.794	12.005	12.500
90	0.993	10.908	12.326	12.500
100	0.997	10.943	12.425	12.500
110	0.964	10.651	11.616	12.500
120	0.947	10.496	11.210	12.500
130	0.897	10.025	10.058	12.500
140	0.821	9.256	8.426	12.500
150	0.765	8.642	7.315	12.500
160	0.758	8.562	7.182	12.500
170	0.739	8.342	6.827	12.500
180	0.695	7.809	6.038	12.500
190	0.618	6.789	4.774	12.500
200	0.519	5.272	3.367	12.500
210	0.473	4.466	2.797	12.500
220	0.460	4.224	2.645	12.500
230	0.408	3.182	2.081	12.500
240	0.328	1.287	1.345	12.500
250	0.253	-0.968	0.800	12.500
260	0.215	-2.382	0.578	12.500
270	0.211	-2.545	0.557	12.500
280	0.227	-1.910	0.644	12.500
290	0.236	-1.573	0.696	12.500
300	0.219	-2.222	0.600	12.500
310	0.213	-2.463	0.567	12.500
320	0.257	-0.832	0.826	12.500
330	0.349	1.826	1.523	12.500
340	0.474	4.485	2.808	12.500
350	0.611	6.690	4.667	12.500
Additional Point 96	1.000	10.969	12.500	12.500



Date
Call Letters
Location

7/14/2015
WMVY
Edgartown, MA

Antenna Type
Frequency
Drawing #

DCRH
88.7
P27

CUSTOMER GAIN SUMMARY

Azimuth Pattern Gain of Horizontal Polarization	2.35 (3.71 dB)
Elevation Pattern Gain Per Polarization	1.32 (1.19 dB)
Peak Gain of Horizontal Polarization	3.09 (4.90 dB)



Date
Call Letters
Location

7/14/2015
WMVY
Edgartown, MA

Antenna Type
Frequency
Drawing #

DCRH
88.7
P27

ELEVATION PATTERN

RMS Gain at Main Lobe **1.32 (1.19 dB)**
Per Polarization
Calculated / Measured **Calculated**

Beam Tilt
Frequency **88.7 MHz**

