



PATTERN CERTIFICATION

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PATTERN CERTIFICATION

Method of Measurement

The azimuth pattern for "WSSR", Dielectric Document Sketch #07a, was measured in the following manner.

A single 4.4 to 1 scale model "DCRM4E5RD" 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 #07a. 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 8 years experience in RF antenna engineering and has been employed by Dielectric Communications since 1997.

Signed By: Keith L. Pelletier

Date: 7/23/07



MSO NO: C-01339

DATE: Jan 7, 2005

PATTERN NO: 07a

FM AZIMUTH PATTERN APPROVAL

The azimuth pattern of the horizontal polarization and vertical polarization as supplied by Dielectric in the document labeled “ Pattern 07a ”, 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

Jul 21, 2007

Call Letters

WSSR

Location

Joliet, IL

Antenna Type

DCRM4E5RD

AZIMUTH PATTERN

92.9% Ccov - 50.3% Hrms - 49.7% Vrms

Gain

2.21 (3.44) HPOL 2.24 (3.5) VPOL

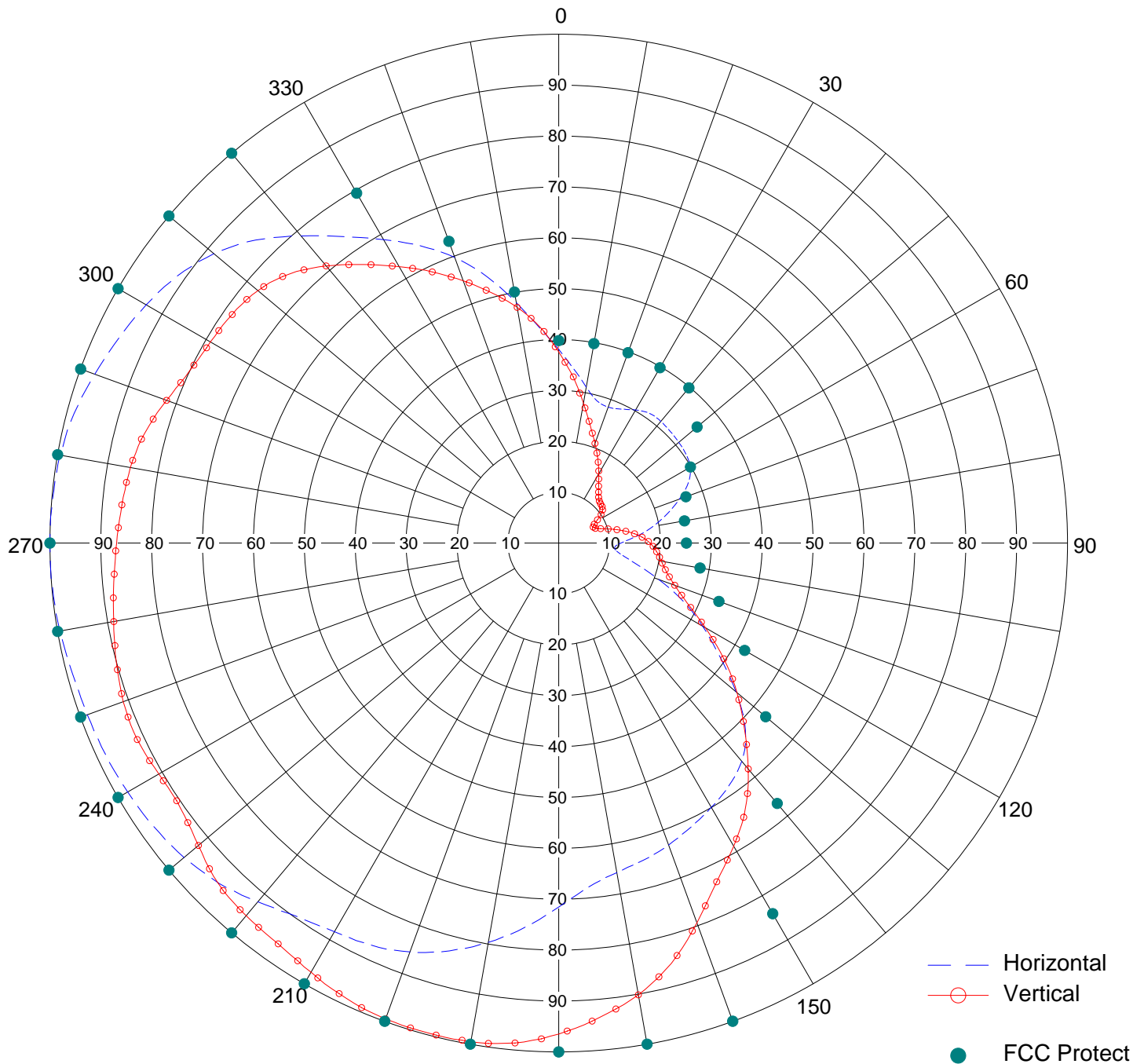
Frequency

96.7 MHz

Calculated / Measured

Measured

Drawing #

07a

Remarks:

WSSR Pole Mounted with parasitics



Proposal Number **C-01339**
 Date **21-Jul-07**
 Call Letters **WSSR**
 Location **Joliet, IL**
 Customer
 Antenna Type **DCRM4E5RD**
 Frequency **96.70 MHz**
 Drawing #: **07a**

TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
0	0.381	-3.468	0.450
10	0.311	-5.231	0.300
20	0.284	-6.020	0.250
30	0.302	-5.486	0.283
40	0.312	-5.203	0.302
50	0.308	-5.315	0.294
60	0.299	-5.573	0.277
70	0.252	-7.058	0.197
80	0.188	-9.603	0.110
90	0.122	-13.359	0.046
100	0.123	-13.288	0.047
110	0.209	-8.683	0.135
120	0.327	-4.795	0.331
130	0.455	-1.926	0.642
140	0.560	-0.123	0.972
150	0.600	0.477	1.116
160	0.632	0.928	1.238
170	0.658	1.278	1.342
180	0.715	2.000	1.585
190	0.797	2.943	1.969
200	0.855	3.553	2.266
210	0.882	3.823	2.412
220	0.920	4.189	2.624
230	0.961	4.568	2.863
240	0.978	4.720	2.965
250	0.986	4.791	3.014
260	0.995	4.870	3.069
270	1.000	4.914	3.100
280	0.995	4.870	3.069
290	0.970	4.649	2.917
300	0.936	4.339	2.716
310	0.885	3.852	2.428
320	0.788	2.844	1.925
330	0.689	1.678	1.472
340	0.598	0.448	1.109
350	0.480	-1.462	0.714



Proposal Number	C-01339
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Customer	
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Drawing #:	07a

TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
0	0.376	-3.583	0.438
10	0.279	-6.174	0.241
20	0.208	-8.725	0.134
30	0.157	-11.168	0.076
40	0.122	-13.359	0.046
50	0.112	-14.102	0.039
60	0.085	-16.498	0.022
70	0.083	-16.705	0.021
80	0.134	-12.544	0.056
90	0.179	-10.029	0.099
100	0.205	-8.851	0.130
110	0.243	-7.374	0.183
120	0.333	-4.637	0.344
130	0.458	-1.869	0.650
140	0.579	0.167	1.039
150	0.688	1.665	1.467
160	0.794	2.910	1.954
170	0.901	4.008	2.517
180	0.965	4.604	2.887
190	0.995	4.870	3.069
200	0.995	4.870	3.069
210	0.974	4.685	2.941
220	0.956	4.523	2.833
230	0.925	4.236	2.652
240	0.908	4.075	2.556
250	0.911	4.104	2.573
260	0.888	3.882	2.444
270	0.869	3.694	2.341
280	0.855	3.553	2.266
290	0.820	3.190	2.084
300	0.791	2.877	1.940
310	0.772	2.666	1.848
320	0.711	1.951	1.567
330	0.627	0.859	1.219
340	0.548	-0.311	0.931
350	0.470	-1.644	0.685



Proposal Number

C-01339

Revision:

2

Date

Jul 21, 2007

Call Letters

WSSR

Location

Joliet, IL

Customer

Antenna Type

DCRM4E5RD

COMPOSITE AZIMUTH PATTERN

Calculated / Measured

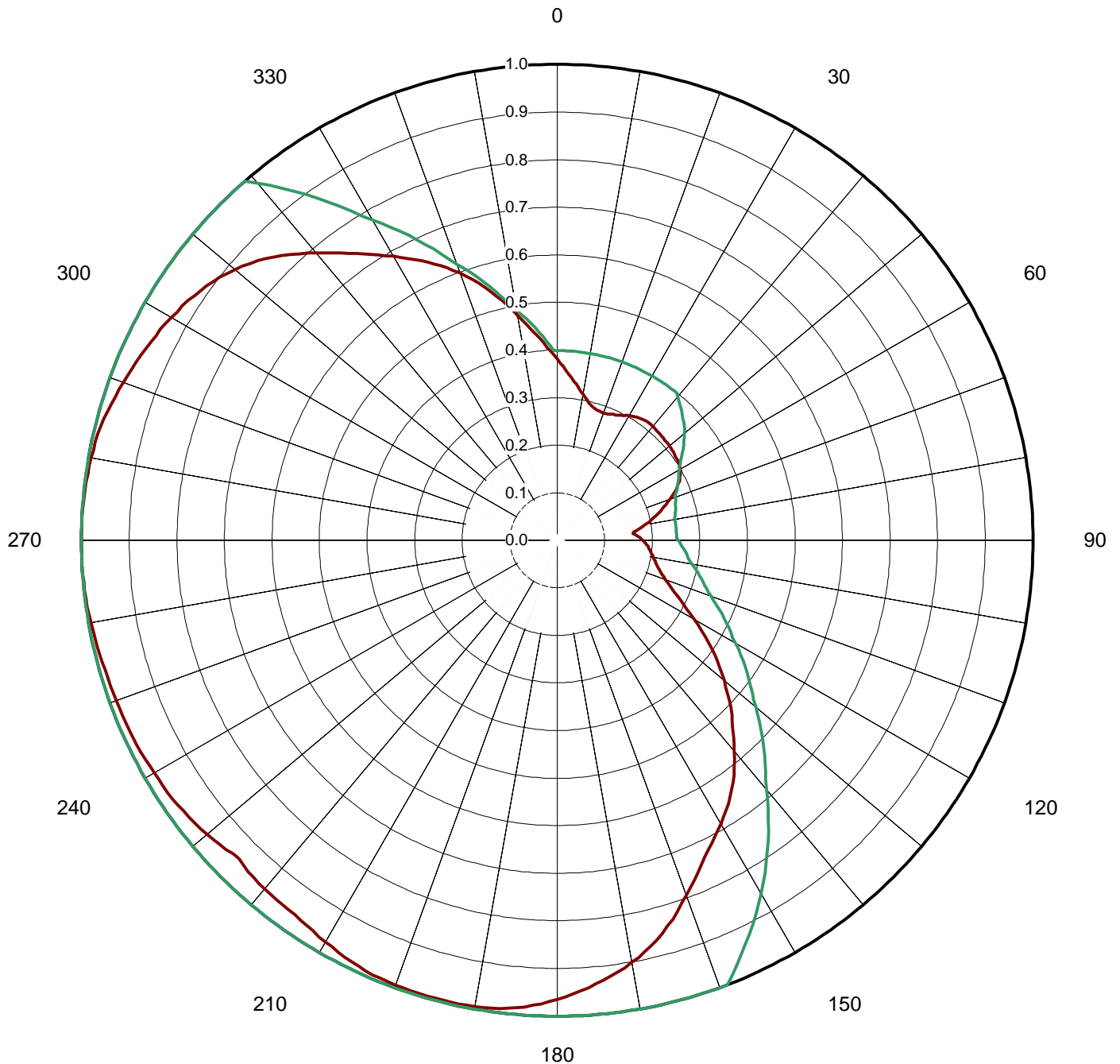
Measured

Frequency

96.70 MHz

Drawing #

07a





Proposal Number	C-01339
Date	21-Jul-07
Call Letters	WSSR
Location	Joliet, IL
Customer	
Antenna Type	DCRM4E5RD
Frequency	96.70 MHz
Drawing #:	07a

TABULATION OF COMPOSITE AZIMUTH PATTERN

Angle	Field	dBk	Power kW	Input Power
0	0.381	-3.468	0.450	3.100
10	0.311	-5.231	0.300	3.100
20	0.284	-6.020	0.250	3.100
30	0.302	-5.486	0.283	3.100
40	0.312	-5.203	0.302	3.100
50	0.308	-5.315	0.294	3.100
60	0.299	-5.573	0.277	3.100
70	0.252	-7.058	0.197	3.100
80	0.188	-9.603	0.110	3.100
90	0.179	-10.029	0.099	3.100
100	0.205	-8.851	0.130	3.100
110	0.243	-7.374	0.183	3.100
120	0.333	-4.637	0.344	3.100
130	0.458	-1.869	0.650	3.100
140	0.579	0.167	1.039	3.100
150	0.688	1.665	1.467	3.100
160	0.794	2.910	1.954	3.100
170	0.901	4.008	2.517	3.100
180	0.965	4.604	2.887	3.100
190	0.995	4.870	3.069	3.100
200	0.995	4.870	3.069	3.100
210	0.974	4.685	2.941	3.100
220	0.956	4.523	2.833	3.100
230	0.961	4.568	2.863	3.100
240	0.978	4.720	2.965	3.100
250	0.986	4.791	3.014	3.100
260	0.995	4.870	3.069	3.100
270	1.000	4.914	3.100	3.100
280	0.995	4.870	3.069	3.100
290	0.970	4.649	2.917	3.100
300	0.936	4.339	2.716	3.100
310	0.885	3.852	2.428	3.100
320	0.788	2.844	1.925	3.100
330	0.689	1.678	1.472	3.100
340	0.598	0.448	1.109	3.100
350	0.480	-1.462	0.714	3.100



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CUSTOMER GAIN SUMMARY

Azimuth Pattern Gain of Horizontal Polarization	2.20	(3.42 dB)
Elevation Pattern Gain Per Polarization	1.30	(1.14 dB)
Peak Gain at Horizontal Polarization	2.86	(4.56 dB)

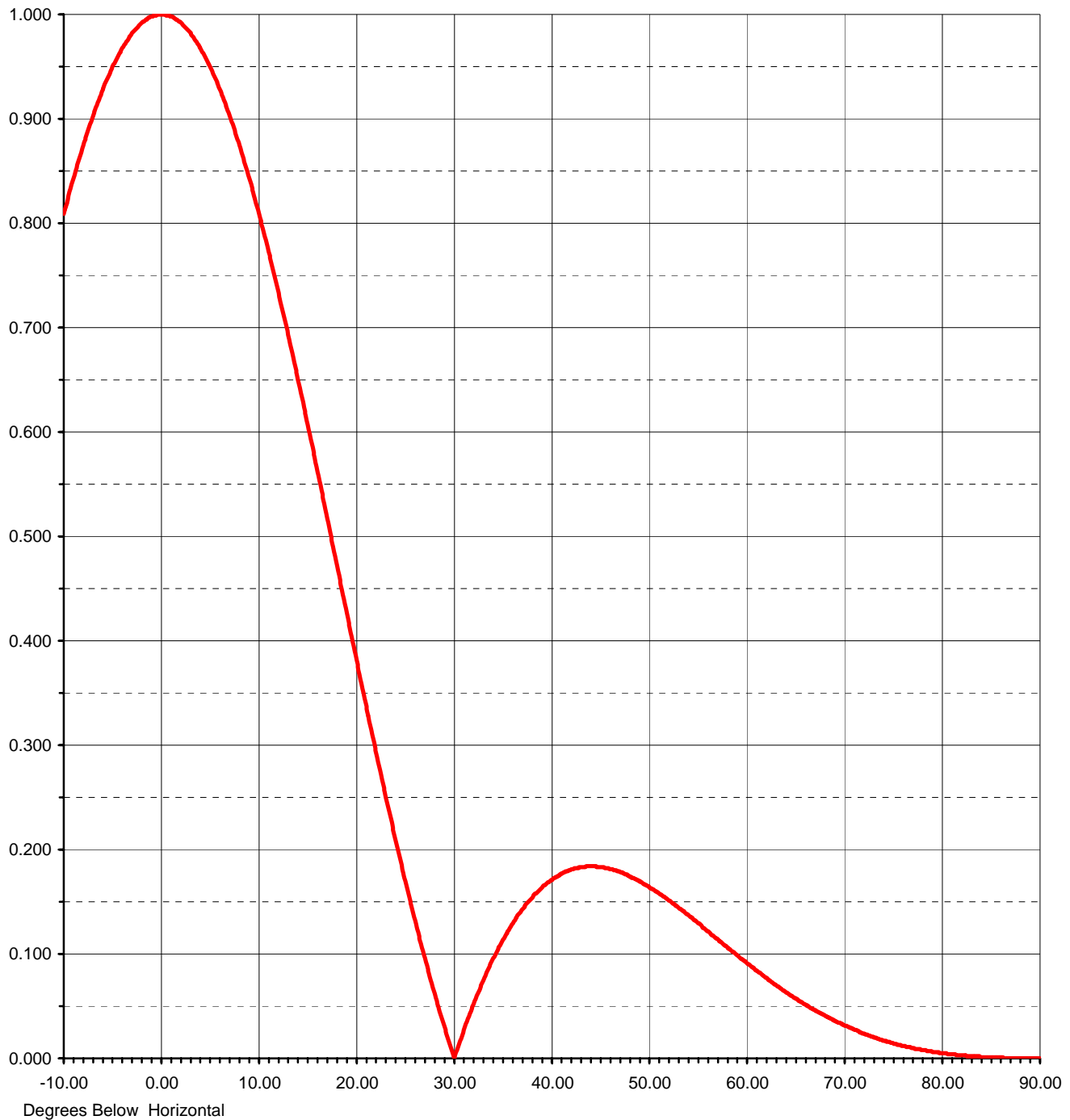


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Customer
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Drawing #

ELEVATION PATTERN

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

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



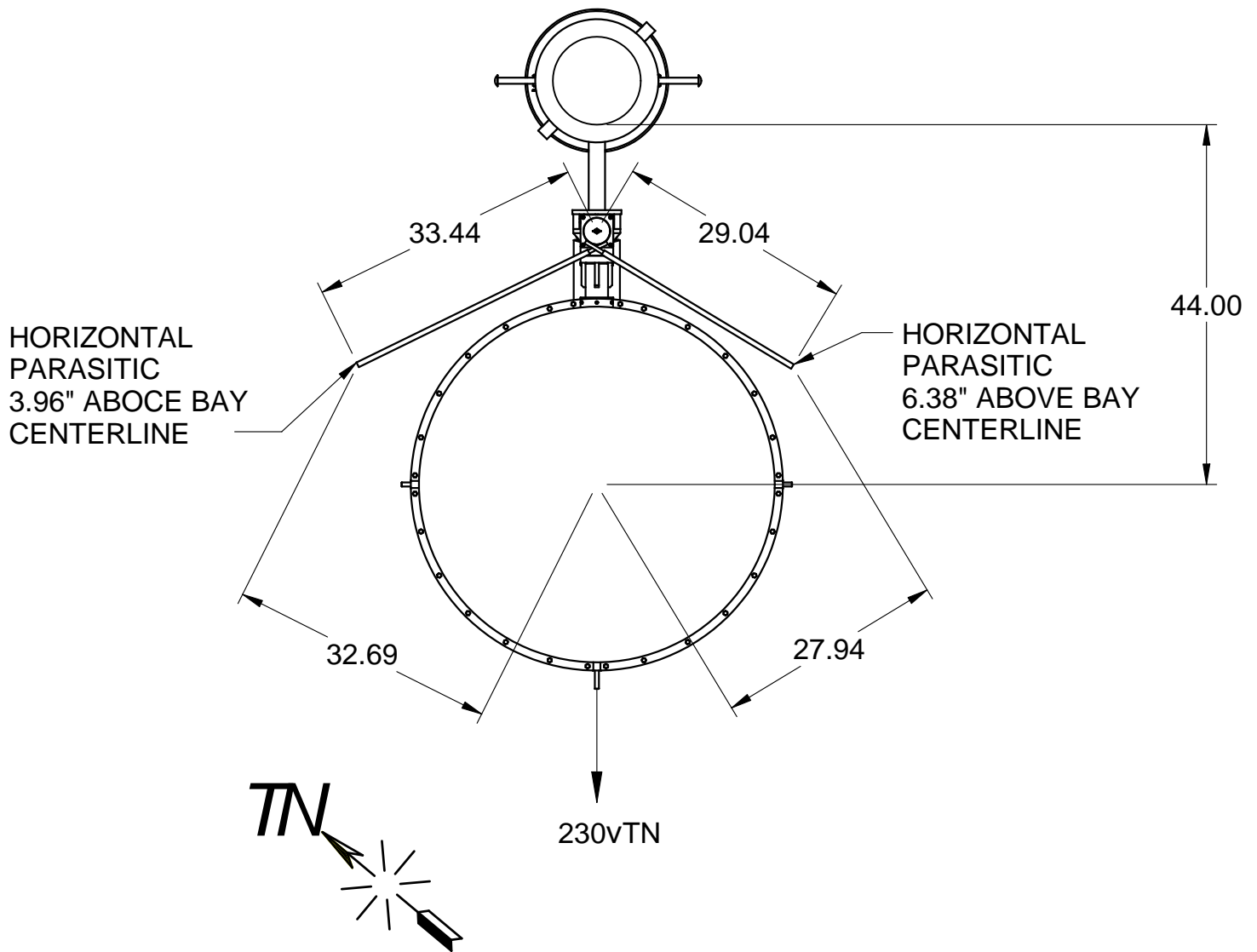
REV:

REVISION NOTE

CAD MAINTAINED. CHANGES SHALL BE INCORPORATED BY THE DESIGN ACTIVITY.

A

SEE SHEET #1



WSSR 96.7 MHz
JOLIET, IL
DCRM4E5RD
WSSR_07A.CPN
KAM 7/20/07

Dielectric

A Unit of SPX Corporation

Raymond, ME

GAGE CODE

A**08441**

DRAWING NO:

PATTERN_07A

7:04:28 AM

SHEET: 1 OF 1