



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



PATTERN CERTIFICATION

Method of Measurement

The azimuth pattern for "WFUV-AUX", Dielectric Document Sketch #17 revA, was measured in the following manner.

A single 4.4 to 1 scale model "DCRM2E5H" 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 #17 revA. 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 Pelletier

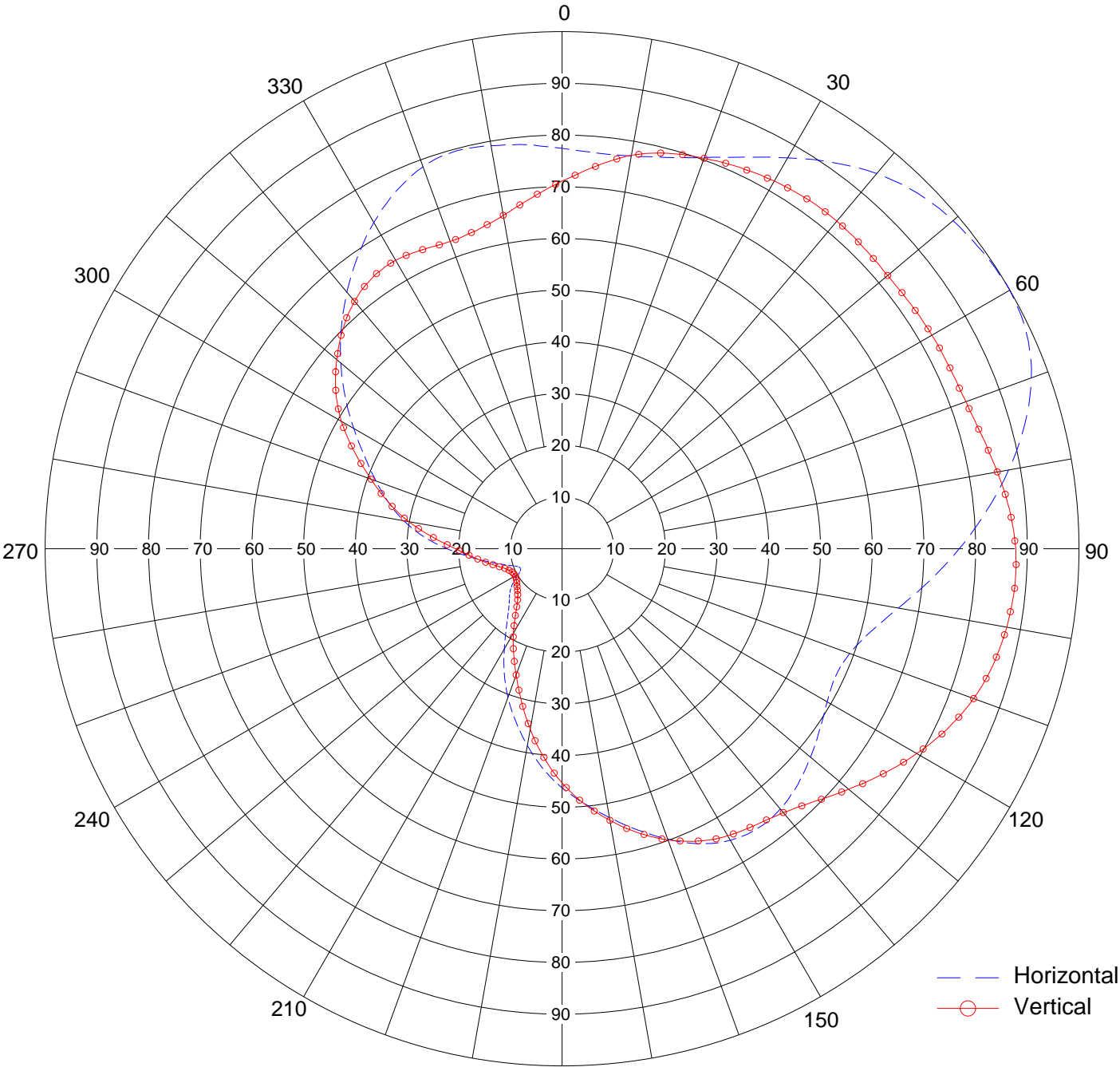
Date: 12/9/05

Proposal Number **82987** Revision **2**
Date **Dec 9, 2005**
Call Letters **WFUV-AUX**
Location **Bronx, NY**
Customer **Fordham University**
Antenna Type **DCRM2E5H**

AZIMUTH PATTERN

50.5% Hrms 49.5% Vrms

Gain **2.5 (3.98) HPOL 2.02 (3.05) VPOL** Frequency **90.7 MHz**
Calculated / Measured **Measured** Drawing # **17 revA**





Proposal Number	82987
Date	9-Dec-05
Call Letters	WFUV-AUX
Location	Bronx, NY
Customer	Fordham University
Antenna Type	DCRM2E5H
Frequency	90.70 MHz
Drawing #:	17 revA

TABULATION OF HORIZONTAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
0	0.774	13.410	21.926
10	0.772	13.387	21.813
20	0.805	13.751	23.718
30	0.873	14.455	27.894
40	0.947	15.162	32.823
50	0.987	15.521	35.655
60	1.000	15.635	36.600
70	0.966	15.334	34.154
80	0.877	14.495	28.150
90	0.768	13.342	21.588
100	0.661	12.039	15.991
110	0.592	11.081	12.827
120	0.592	11.081	12.827
130	0.627	11.580	14.389
140	0.657	11.986	15.798
150	0.651	11.906	15.511
160	0.598	11.169	13.088
170	0.528	10.087	10.203
180	0.462	8.928	7.812
190	0.386	7.367	5.453
200	0.306	5.349	3.427
210	0.224	2.640	1.836
220	0.162	-0.175	0.961
230	0.132	-1.954	0.638
240	0.097	-4.630	0.344
250	0.098	-4.541	0.352
260	0.145	-1.138	0.770
270	0.223	2.601	1.820
280	0.310	5.462	3.517
290	0.383	7.299	5.369
300	0.465	8.984	7.914
310	0.559	10.583	11.437
320	0.648	11.866	15.368
330	0.728	12.877	19.397
340	0.786	13.543	22.611
350	0.791	13.598	22.900



Proposal Number	82987
Date	9-Dec-05
Call Letters	WFUV-AUX
Location	Bronx, NY
Customer	Fordham University
Antenna Type	DCRM2E5H
Frequency	90.70 MHz
Drawing #:	17 revA

TABULATION OF VERTICAL AZIMUTH PATTERN

Angle	Field	dBk	ERP kW
0	0.711	12.672	18.502
10	0.773	13.398	21.870
20	0.803	13.729	23.600
30	0.821	13.922	24.670
40	0.827	13.985	25.032
50	0.822	13.932	24.730
60	0.826	13.974	24.971
70	0.832	14.037	25.335
80	0.855	14.274	26.756
90	0.878	14.505	28.214
100	0.874	14.465	27.958
110	0.847	14.192	26.257
120	0.792	13.609	22.958
130	0.724	12.830	19.185
140	0.666	12.104	16.234
150	0.641	11.772	15.038
160	0.599	11.183	13.132
170	0.533	10.169	10.398
180	0.453	8.757	7.511
190	0.354	6.615	4.587
200	0.260	3.934	2.474
210	0.188	1.118	1.294
220	0.135	-1.759	0.667
230	0.114	-3.227	0.476
240	0.105	-3.941	0.404
250	0.115	-3.151	0.484
260	0.150	-0.843	0.824
270	0.206	1.912	1.553
280	0.301	5.206	3.316
290	0.393	7.523	5.653
300	0.493	9.492	8.896
310	0.569	10.737	11.850
320	0.624	11.539	14.251
330	0.644	11.813	15.179
340	0.632	11.649	14.619
350	0.655	11.960	15.702



Proposal Number	82987	Revision:	2
Date	Dec 09, 2005		
Call Letters	WFUV-AUX		
Location	Bronx, NY		
Customer	Fordham University		
Antenna Type	DCRM2E5H		

COMPOSITE AZIMUTH PATTERN

Calculated / Measured

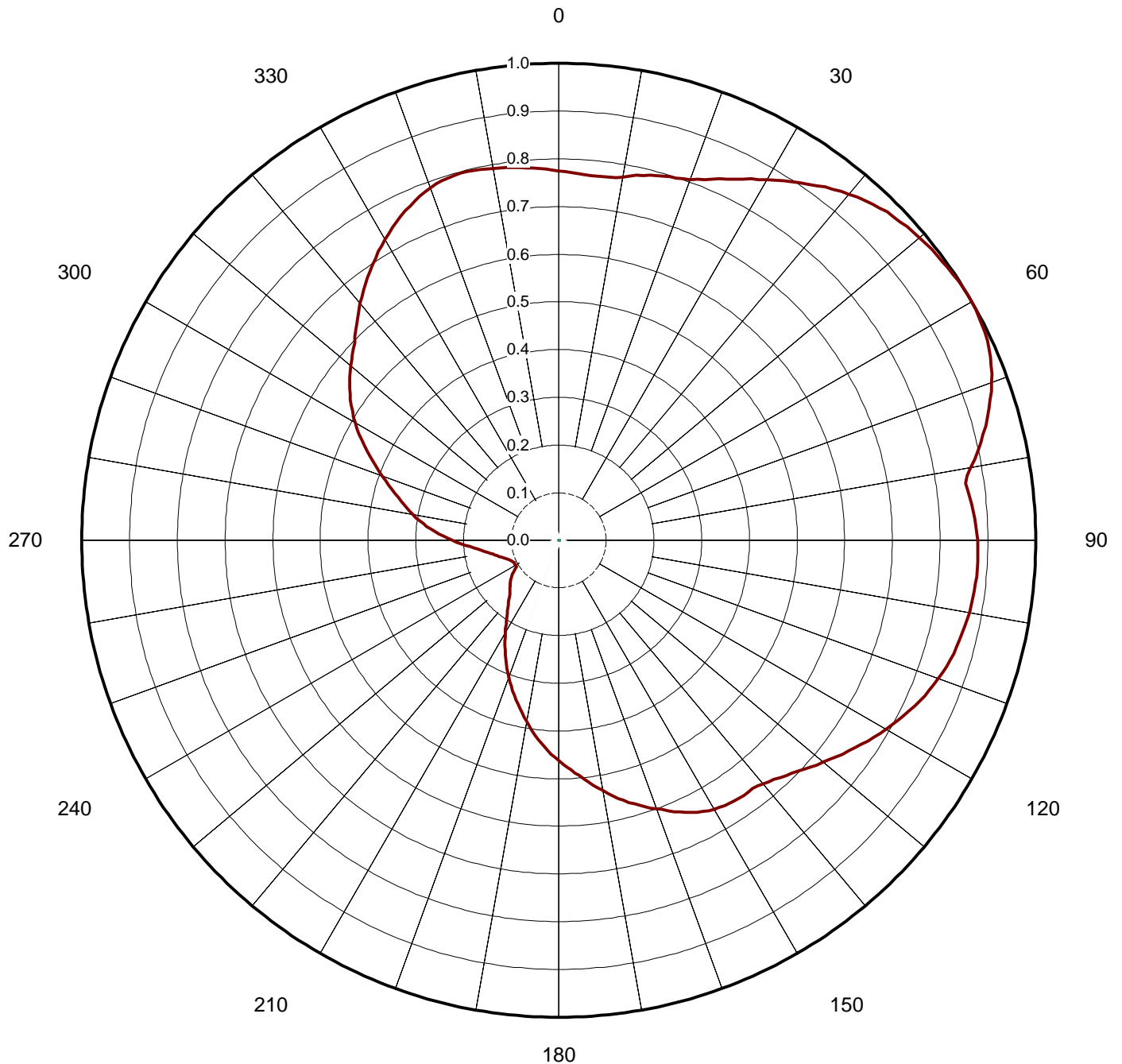
Measured

Frequency

90.70 MHz

Drawing #

17 revA





Proposal Number	82987
Date	9-Dec-05
Call Letters	WFUV-AUX
Location	Bronx, NY
Customer	Fordham University
Antenna Type	DCRM2E5H
Frequency	90.70 MHz
Drawing #:	17 revA

TABULATION OF COMPOSITE AZIMUTH PATTERN

Angle	Field	dBk	Power kW	Input Power
0	0.774	13.410	21.926	36.600
10	0.773	13.398	21.870	36.600
20	0.805	13.751	23.718	36.600
30	0.873	14.455	27.894	36.600
40	0.947	15.162	32.823	36.600
50	0.987	15.521	35.655	36.600
60	1.000	15.635	36.600	36.600
70	0.966	15.334	34.154	36.600
80	0.877	14.495	28.150	36.600
90	0.878	14.505	28.214	36.600
100	0.874	14.465	27.958	36.600
110	0.847	14.192	26.257	36.600
120	0.792	13.609	22.958	36.600
130	0.724	12.830	19.185	36.600
140	0.666	12.104	16.234	36.600
150	0.651	11.906	15.511	36.600
160	0.599	11.183	13.132	36.600
170	0.533	10.169	10.398	36.600
180	0.462	8.928	7.812	36.600
190	0.386	7.367	5.453	36.600
200	0.306	5.349	3.427	36.600
210	0.224	2.640	1.836	36.600
220	0.162	-0.175	0.961	36.600
230	0.132	-1.954	0.638	36.600
240	0.105	-3.941	0.404	36.600
250	0.115	-3.151	0.484	36.600
260	0.150	-0.843	0.824	36.600
270	0.223	2.601	1.820	36.600
280	0.310	5.462	3.517	36.600
290	0.393	7.523	5.653	36.600
300	0.493	9.492	8.896	36.600
310	0.569	10.737	11.850	36.600
320	0.648	11.866	15.368	36.600
330	0.728	12.877	19.397	36.600
340	0.786	13.543	22.611	36.600
350	0.791	13.598	22.900	36.600



Proposal Number	82987
Date	Dec 09, 2005
Call Letters	WFUV-AUX
Location	Bronx, NY
Customer	Fordham University
Antenna Type	DCRM2E5H
Frequency	90.70 MHz
Drawing #	17 revA

CUSTOMER GAIN SUMMARY

Azimuth Pattern Gain of Horizontal Polarization	2.49	(3.96 dB)
Elevation Pattern Gain Per Polarization	0.70	(-1.55 dB)
Peak Gain at Horizontal Polarization	1.74	(2.41 dB)

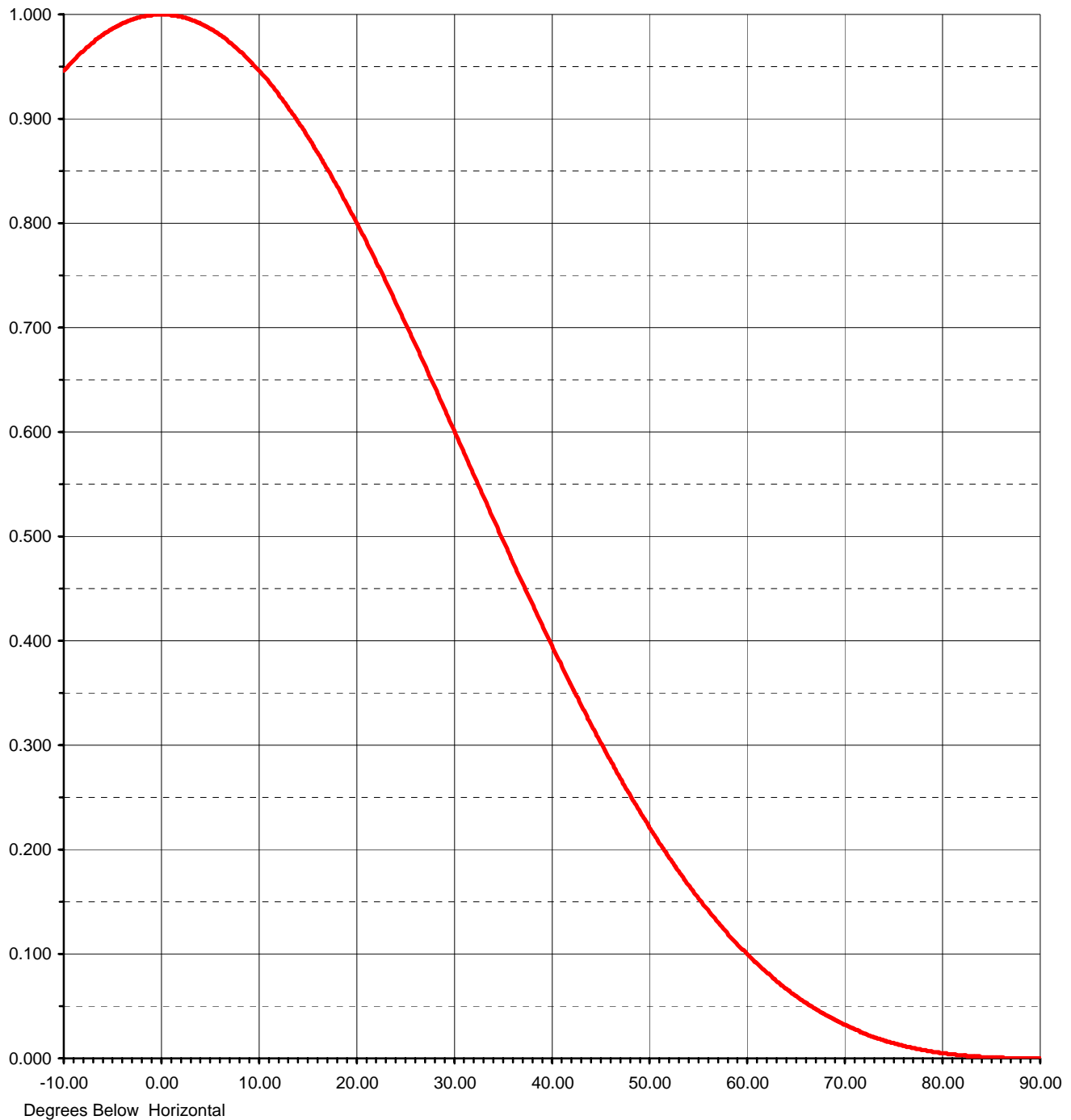


Proposal Number	82987
Date	9-Dec-05
Call Letters	WFUV-AUX
Location	Bronx, NY
Customer	Fordham University
Antenna Type	DCRM2E5H
Drawing #	

ELEVATION PATTERN

RMS Gain at Main Lobe **0.70 -(1.55 dB)**
Per Polarization
Calculated / Measured **Calculated**

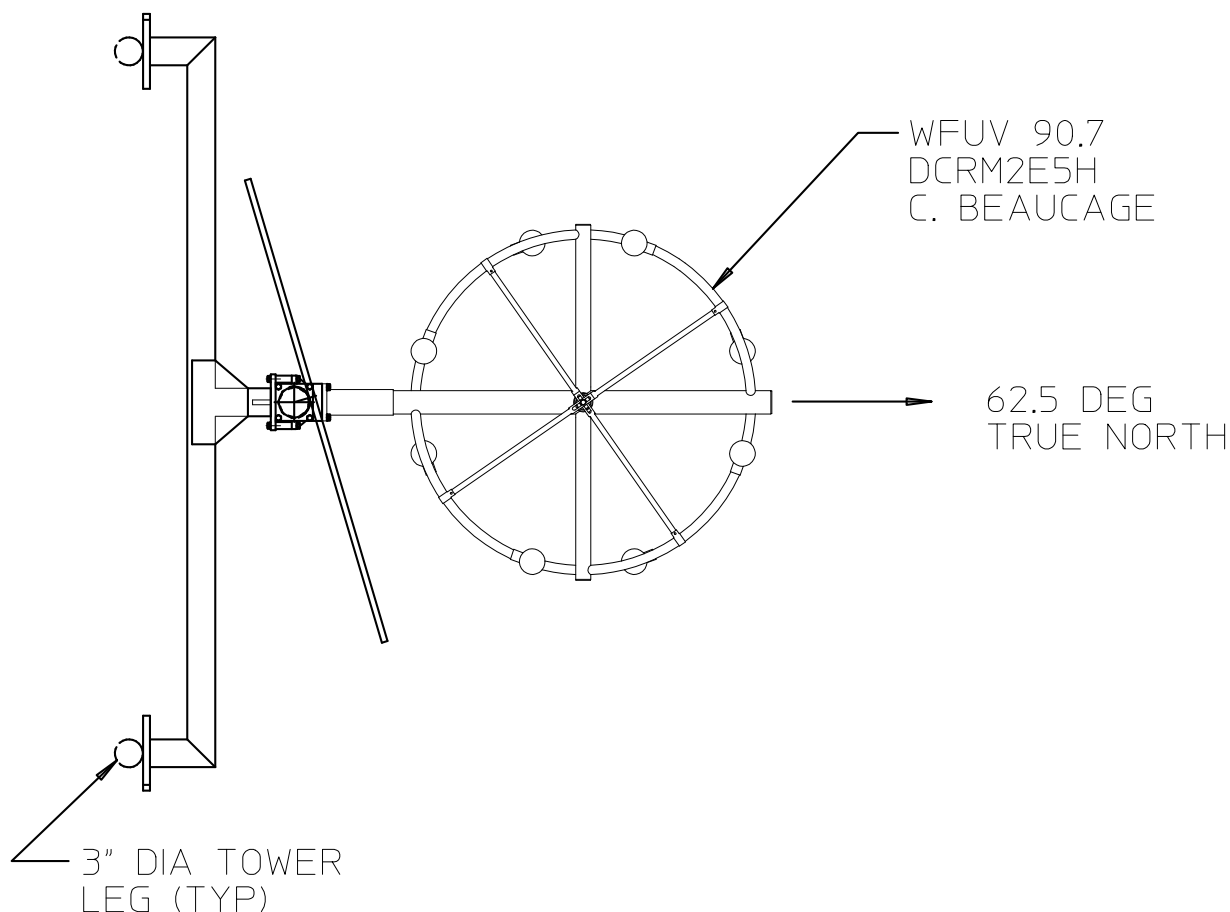
Beam Tilt **0.00 deg**
Frequency **90.70 MHz**



REVISIONS

REV	VER	DESCRIPTION	CHNG BY	DATE	ENG ARPR	MFG ARPR

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




COMPANY CONFIDENTIAL. INFORMATION CONTAINED HEREIN IS CONFIDENTIAL. IT IS THE PROPERTY OF SPX CORP. IT IS TO BE USED SOLELY FOR THE PURPOSE PROVIDED, AND IT IS NOT TO BE DISCLOSED TO OTHERS WITHOUT THE PRIOR WRITTEN CONSENT OF SPX CORPORATION.

MANUFACTURING TOLERANCE AND PROCEDURES MUST BE IN ACCORDANCE WITH D78691, UNLESS OTHERWISE SPECIFIED.

ALL WELDING MUST COMPLY WITH A-62700, SECT. XIV "PRODUCTION WELDING PROCEDURES",

STRUCTURAL STEEL WELDING MUST COMPLY WITH "AWS 1.1 CURRENT REVISION", UNLESS SPECIFIED.

PART NO:	STATE:		 <p>A Unit of SPX Corporation</p>				
	3-Feb-2004 16:53:09						
MATERIAL:	DIMENSIONAL TOLERANCES (UNLESS OTHERWISE NOTED) 3 PLACE DIMENSIONS ± .005 2 PLACE DIMENSIONS ± .02 ANGULAR DIMENSIONS ± 0°-30' REF DIMENSIONS ARE NOT FOR MANUFACTURING OR INSPECTION		TITLE:				
			A-SIZE				
FINISH:		NAME	DATE	CODE IDENT NO 08441	DRAWING NO: A	REV:	VER:
	DRAWN BY						
	CHKD. BY						
	ENG. 1 APPR.						
	ENG. 2 APPR.						
	MANUFACT.						
QUALITY			SHEET: OF				

Do Not Remove This Text