ERI® Electronics Research, Inc.
Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 http://www.eriinc.com/

Directional Antenna System for WLVG, Center Moriches, New York

October 18, 2002

Electronics Research Inc. is providing a custom fabricated antenna system that is specially designed to meet the FCC requirements and the general needs of radio station WLVG.

The antenna is the ERI model LP-2E-DA-HW configuration. The circular polarized system consists of two half-wavelength spaced bays using one driven circular polarized radiating element per bay and one horizontal parasitic element per bay. The antenna was tested on a 6 5/8" o.d. pole, which is the structure the station plans to use to support the array. All tests were performed on a frequency of 96.1 megahertz, which is the center of the FM broadcast channel assigned to WLVG.

Pattern measurements were made on a sixty-acre antenna pattern range that is owned and operated by Electronics Research, Inc. The tests were performed under the direction of Thomas B. Silliman, president of Electronics Research, Inc. Mr. Silliman has the Bachelor of Electrical Engineering and the Master of Electrical Engineering degrees from Cornell University and is a registered professional engineer in the states of Indiana, Maryland and Minnesota.

EXHIBIT B1
APPLICATION FOR STATION LICENSE/
REQUEST FOR PROGRAM TEST AUTHORITY
WAY BROADCASTING, INC.
WLVG (FM) RADIO STATION
CH 241A - 96.1 MHZ - 2.65 KW (DA)
CENTER MORICHES, NEW YORK
February 2003

Directional Antenna System
For
WLVG, Center Moriches, New York

(Continued)

DESCRIPTION OF THE TEST PROCEDURE

The test antenna consisted of a full-scale model of the complete circular polarized system with the associated horizontal parasitic element. The elements and brackets that were used in this test are electrically equivalent to those that will be supplied with the antenna. A section of 1 5/8 inch o.d. rigid coaxial line was used to feed the test antenna, and a section of 1 5/8 inch o.d. rigid outer conductor only was attached above the test antenna. The lines were properly grounded during all tests.

The power distribution and phase relationship to the antenna elements was adjusted in order to achieve the directional radiation patterns for both horizontal and vertical polarization components.

The proof-of-performance was accomplished using a 6 5/8" o.d. pole with identical dimension and configuration including all braces, ladders, conduits, coaxial lines and other appurtenances that are included in the actual aperture at which the antenna will be installed. The structure was erected vertically on a turntable mounted on a non-metallic building with the antenna centered vertically on the structure, making the center of radiation of the test approximately 30 feet above ground. The turntable is equipped with a motor drive and azimuth indicating mechanism, resolution of this azimuth measuring device is one-tenth of a degree.

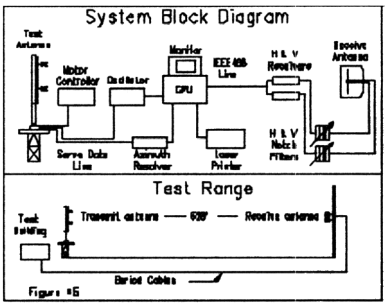


Figure #5

The antenna under test was operated in the transmitting mode and fed from a Wavetek Model 3000 signal generator. The frequency of the signal source was set at 96.1 MHz and was constantly monitored by an Anritsu Model ML521B measuring receiver.

A broad-band horizontal and vertical dipole system, located approximately 628 feet from the test antenna, was used to receive the emitted test signals. The dipole system was mounted at the same height above terrain as the center of the antenna under test. The signals received by the dipole system were fed to the test building by way of two buried Heliax cables to an Anritsu Model ML521B measuring receiver.

This data was interfaced to a Hewlett-Packard Laser Jet 4P printer by means of a Pentium computer system. Relative field strength was plotted as a function of azimuth.

The measurements were performed by rotating the test antenna in a counter-clockwise direction and plotting the received signal on polar co-ordinated graph paper in a clockwise direction. Both horizontal and vertical components were recorded separately.

CONCLUSIONS

The circular polarized system consists of two half-wavelength spaced bays using one driven circular polarized radiating element per bay and one horizontal parasitic element per bay. The power distribution and phase relationship will be fixed when antenna is manufactured. Proper maintenance of the elements should be all that is required to maintain the pattern in adjustment.

The LP-2E-DA-HW array is to be mounted on the 6 5/8" o.d. pole at a bearing of North 90 degrees East. Blue prints provided with the antenna will show the proper antenna orientation alignment. The antenna alignment procedure should be directed by a licensed surveyor as prescribed by the FCC.

Figure #1 represents the maximum value of either the horizontal or vertical component at any azimuth. The measured horizontal plane relative field pattern, for both the horizontal and vertical polarization components, is shown on Figure #2 attached. The actual measured pattern does not exceed the authorized FCC composite pattern at any azimuth. A calculated vertical plane relative field pattern is shown on Figure #3 attached. The power in the maximum will reach 2.65 kilowatts (4.232 dBk).

The power at North 250 degrees East does not exceed 0.383 kilowatts (-4.168 dBk).

The power at North 270 degrees East does not exceed 0.383 kilowatts (-4.168 dBk).

The power at North 290 degrees East does not exceed 0.383 kilowatts (-4.168 dBk).

Directional Antenna System
For
WLVG, Center Moriches, New York

(Continued)

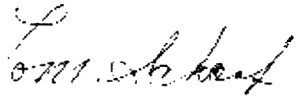
The RMS of the vertically polarized horizontal plane component does not exceed the RMS of the horizontally polarized horizontal plane component.

The composite horizontal and vertical maximum relative field pattern obtained from the measured data as shown on Figure #1 has an RMS that is greater that 85% of the filed composite pattern.

The clear vertical length of the structure required to support the antenna is 21 feet if the antenna is to be top mounted.

The directional antenna should not be mounted on the top of an antenna tower that includes a top-mounted platform larger than the cross-sectional area of the tower in the horizontal plane. No obstructions other than those that are specified by the blue prints supplied with the antenna are to be mounted within 75 ft. horizontally of the system. The vertical distance to the nearest obstruction should be a minimum of 10 ft. from the directional antenna. Metallic guy wires should be a minimum distance of forty feet horizontally from the antenna.

ELECTRONICS RESEARCH, INC.

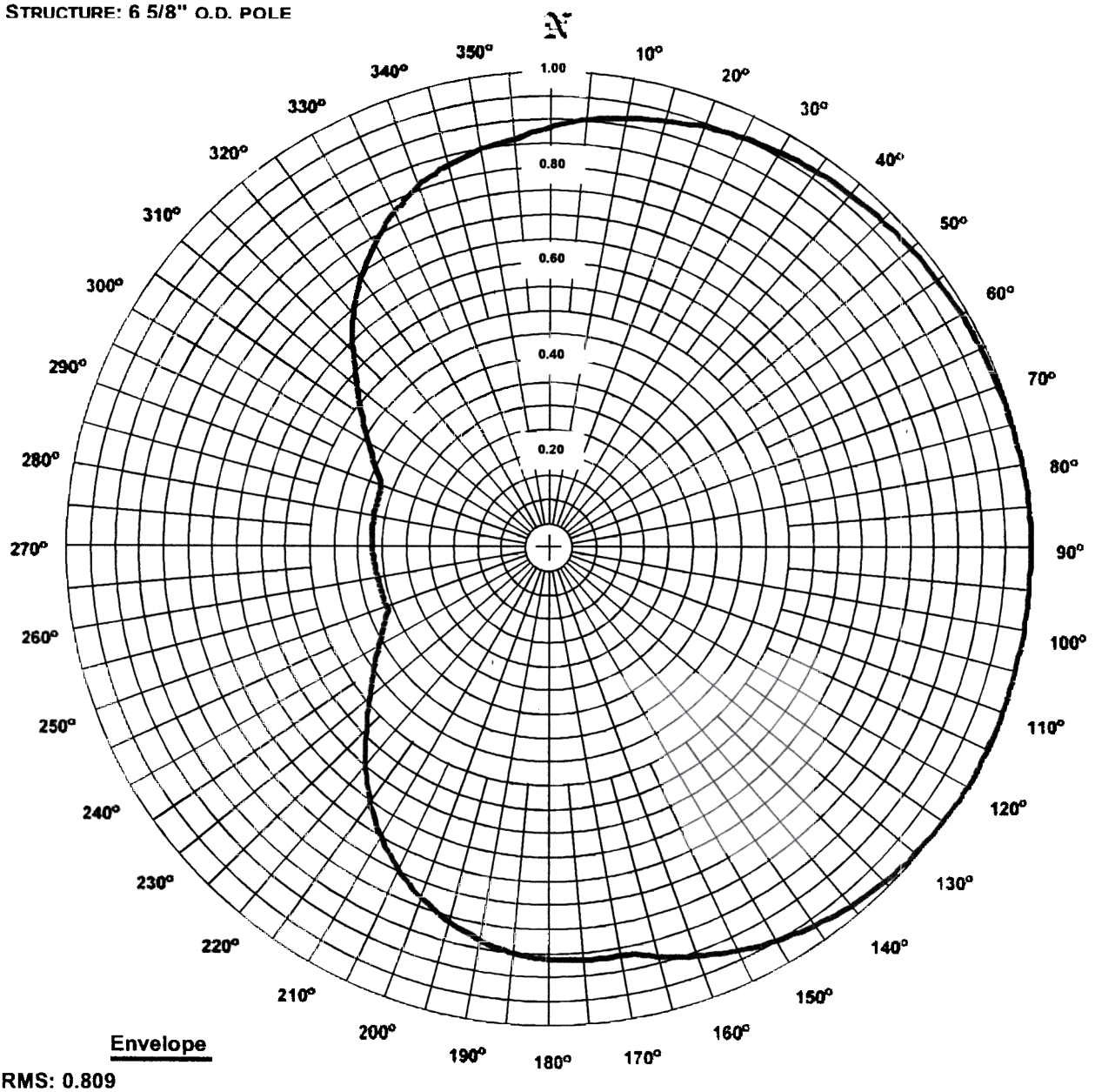


ERI® Horizontal Plane Relative Field Pattern

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 http://www.eriinc.com/

FIGURE: 1
STATION: WLVG
LOCATION: CENTER MORICHES, NY
ANTENNA TYPE: LP-2E-DA-HW
STRUCTURE: 6 5/8" O.D. POLE

DATE: 10/18/02
FREQUENCY: 96.1 MHz
ORIENTATION: 90° TRUE
MOUNTING: STANDARD



Envelope

RMS: 0.809
Maximum: 1.000 @ 88° True
Minimum: 0.363 @ 250° True

COMMENTS: COMPOSITE PATTERN: THIS PATTERN SHOWS THE MAXIMUM OF EITHER THE H OR V AZIMUTH VALUES. THIS PATTERN DOES NOT EXCEED THE FCC FILED COMPOSITE PATTERN AT ANY AZIMUTH. THE RMS OF THIS PATTERN IS GREATER THAN 85% OF THE FILED FCC COMPOSITE PATTERN BPH-20001005ABY.

ERI® Horizontal Plane Relative Field List

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 http://www.eriinc.com/

Station: WLVG
Location: Center Moriches, NY
Frequency: 96.1 MHz

Antenna: LP-2E-DA-HW
Orientation: 90° True
Tower: 6 5/8" o.d. pole

Figure: 1
Date: 10/18/02
Reference: wlvg1m.fig

Angle	Envelope			Polarization	Angle	Envelope			Polarization
	Field	kW	dBk			Field	kW	dBk	
0°	0.890	2.10	3.22	Vertical	180°	0.857	1.95	2.89	Horizontal
5°	0.909	2.19	3.41	Vertical	185°	0.847	1.90	2.79	Horizontal
10°	0.922	2.25	3.53	Vertical	190°	0.831	1.83	2.62	Horizontal
15°	0.934	2.31	3.64	Vertical	195°	0.808	1.73	2.38	Horizontal
20°	0.947	2.37	3.76	Vertical	200°	0.779	1.61	2.07	Horizontal
25°	0.955	2.42	3.83	Vertical	205°	0.744	1.47	1.67	Horizontal
30°	0.963	2.46	3.90	Vertical	210°	0.703	1.31	1.17	Horizontal
35°	0.968	2.48	3.95	Vertical	215°	0.655	1.14	0.56	Horizontal
40°	0.974	2.51	4.00	Vertical	220°	0.601	0.96	-0.19	Horizontal
45°	0.978	2.53	4.04	Vertical	225°	0.546	0.79	-1.03	Horizontal
50°	0.981	2.55	4.07	Vertical	230°	0.497	0.65	-1.85	Horizontal
55°	0.985	2.57	4.10	Vertical	235°	0.454	0.55	-2.63	Horizontal
60°	0.988	2.59	4.12	Vertical	240°	0.417	0.46	-3.36	Horizontal
65°	0.990	2.60	4.15	Vertical	245°	0.387	0.40	-4.01	Horizontal
70°	0.993	2.61	4.17	Vertical	250°	0.363	0.35	-4.56	Vertical
75°	0.995	2.62	4.19	Vertical	255°	0.365	0.35	-4.52	Vertical
80°	0.998	2.64	4.21	Horizontal	260°	0.367	0.36	-4.47	Vertical
85°	1.000	2.65	4.23	Horizontal	265°	0.370	0.36	-4.40	Vertical
90°	1.000	2.65	4.23	Horizontal	270°	0.373	0.37	-4.34	Vertical
95°	1.000	2.65	4.23	Vertical	275°	0.375	0.37	-4.29	Vertical
100°	1.000	2.65	4.23	Vertical	280°	0.377	0.38	-4.25	Vertical
105°	1.000	2.65	4.23	Vertical	285°	0.378	0.38	-4.23	Vertical
110°	1.000	2.65	4.23	Vertical	290°	0.378	0.38	-4.22	Vertical
115°	1.000	2.65	4.23	Vertical	295°	0.405	0.43	-3.63	Horizontal
120°	0.999	2.65	4.23	Vertical	300°	0.440	0.51	-2.89	Horizontal
125°	0.996	2.63	4.20	Vertical	305°	0.483	0.62	-2.10	Horizontal
130°	0.991	2.60	4.15	Vertical	310°	0.532	0.75	-1.25	Horizontal
135°	0.983	2.56	4.08	Vertical	315°	0.588	0.92	-0.38	Horizontal
140°	0.972	2.50	3.98	Vertical	320°	0.647	1.11	0.44	Horizontal
145°	0.959	2.43	3.86	Vertical	325°	0.699	1.29	1.12	Horizontal
150°	0.943	2.35	3.72	Vertical	330°	0.744	1.47	1.66	Horizontal
155°	0.924	2.26	3.55	Vertical	335°	0.782	1.62	2.10	Horizontal
160°	0.903	2.16	3.35	Vertical	340°	0.814	1.75	2.44	Horizontal
165°	0.880	2.05	3.12	Vertical	345°	0.838	1.86	2.70	Horizontal
170°	0.862	1.97	2.94	Horizontal	350°	0.856	1.94	2.88	Horizontal
175°	0.861	1.96	2.93	Horizontal	355°	0.867	1.99	3.00	Vertical

Polarization: Envelope
Maximum Field: 1.000 @ 88° True
Minimum Field: 0.363 @ 250° True
RMS: 0.809
Maximum ERP: 2.650 kW
Maximum Power Gain: 1.080 (0.334 dB)

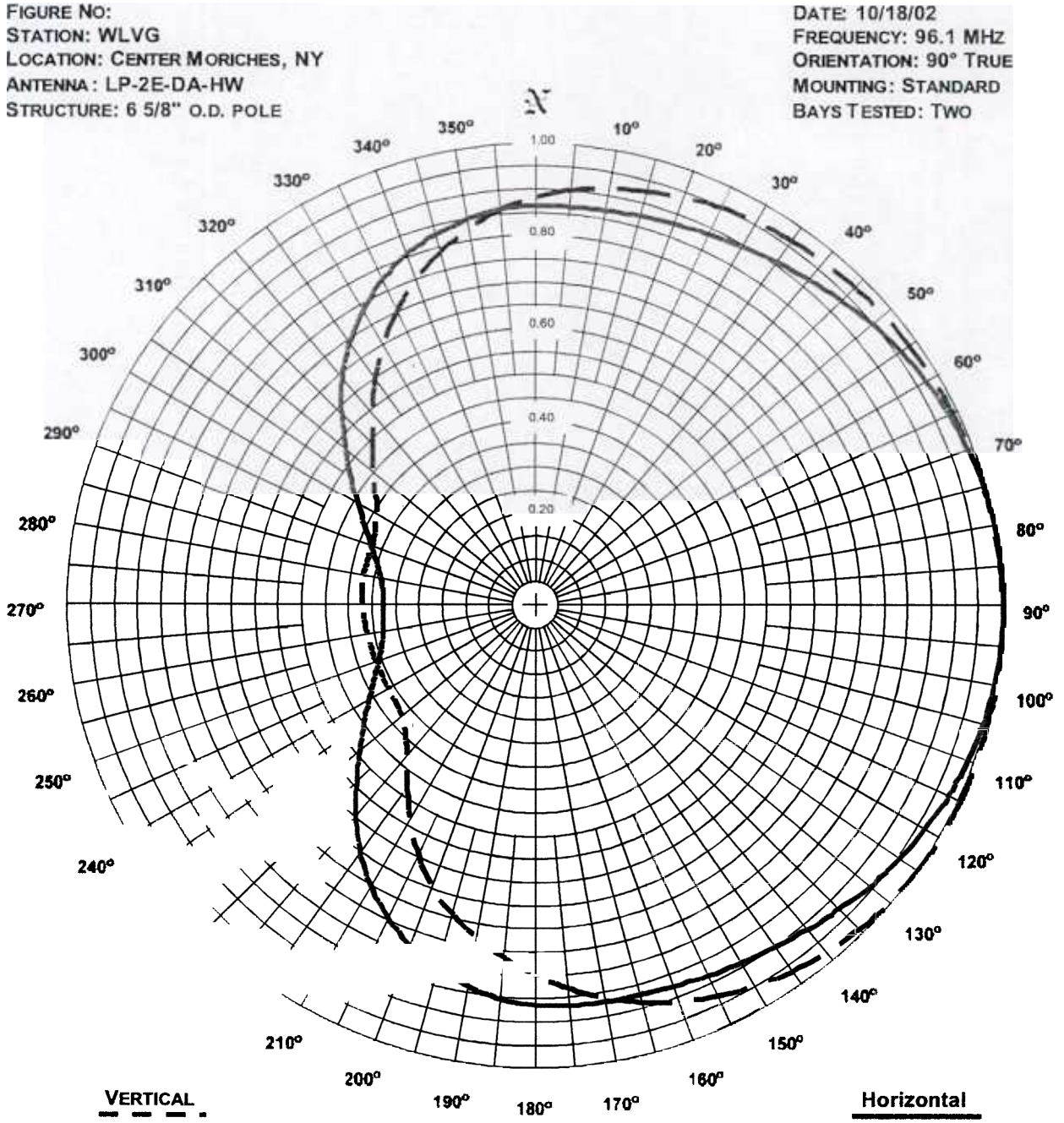
Total Input Power: 2.454 kW

ERI® Horizontal Plane Relative Field Pattern

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 http://www.eriinc.com/

FIGURE NO:
STATION: WLVG
LOCATION: CENTER MORICHES, NY
ANTENNA: LP-2E-DA-HW
STRUCTURE: 6 5/8" O.D. POLE

DATE: 10/18/02
FREQUENCY: 96.1 MHZ
ORIENTATION: 90° TRUE
MOUNTING: STANDARD
BAYS TESTED: TWO



VERTICAL
RMS: 0.783
MAXIMUM: 1.000 @ 103° TRUE
MINIMUM: 0.362 @ 240° TRUE

Horizontal
RMS: 0.789
Maximum: 1.000 @ 88° True
Minimum: 0.329 @ 266° True

COMMENTS: MEASURED PATTERNS OF THE HORIZONTAL AND VERTICAL COMPONETS.

ERI® Horizontal Plane Relative Field List

Electronics Research, Inc. 7777 Gardner Rd. Chandler, In 47610 Phone (812) 925-6000 Fax (812) 925-4030 http://www.eriinc.com/

Station: WLVG
Location: Center Moriches, NY
Frequency: 96.1 MHz

Antenna: LP-2E-DA-HW
Orientation: 90° True
Tower: 6 5/8" o.d. pole

Figure: 2
Date: 10/18/02
Reference: wlvg1m.fig

Angle	Horizontal			Vertical			Angle	Horizontal			Vertical		
	Field	kW	dBk	Field	kW	dBk		Field	kW	dBk	Field	kW	dBk
0°	0.871	2.01	3.03	0.890	2.10	3.22	180°	0.857	1.95	2.89	0.794	1.67	2.23
5°	0.872	2.01	3.04	0.909	2.19	3.41	185°	0.847	1.90	2.79	0.760	1.53	1.85
10°	0.875	2.03	3.07	0.922	2.25	3.53	190°	0.831	1.83	2.62	0.724	1.39	1.43
15°	0.879	2.05	3.11	0.934	2.31	3.64	195°	0.808	1.73	2.38	0.687	1.25	0.97
20°	0.885	2.07	3.17	0.947	2.37	3.76	200°	0.779	1.61	2.07	0.646	1.11	0.44
25°	0.892	2.11	3.24	0.955	2.42	3.83	205°	0.744	1.47	1.67	0.595	0.94	-0.28
30°	0.901	2.15	3.33	0.963	2.46	3.90	210°	0.703	1.31	1.17	0.540	0.77	-1.12
35°	0.912	2.20	3.43	0.968	2.48	3.95	215°	0.655	1.14	0.56	0.483	0.62	-2.09
40°	0.924	2.26	3.55	0.974	2.51	4.00	220°	0.601	0.96	-0.19	0.432	0.49	-3.06
45°	0.938	2.33	3.68	0.978	2.53	4.04	225°	0.546	0.79	-1.03	0.398	0.42	-3.78
50°	0.952	2.40	3.80	0.981	2.55	4.07	230°	0.497	0.65	-1.85	0.375	0.37	-4.28
55°	0.963	2.46	3.91	0.985	2.57	4.10	235°	0.454	0.55	-2.63	0.366	0.35	-4.51
60°	0.974	2.51	4.00	0.988	2.59	4.12	240°	0.417	0.46	-3.36	0.362	0.35	-4.59
65°	0.982	2.56	4.07	0.990	2.60	4.15	245°	0.387	0.40	-4.01	0.362	0.35	-4.58
70°	0.989	2.59	4.14	0.993	2.61	4.17	250°	0.363	0.35	-4.56	0.363	0.35	-4.56
75°	0.994	2.62	4.18	0.995	2.62	4.19	255°	0.346	0.32	-4.99	0.365	0.35	-4.52
80°	0.998	2.64	4.21	0.996	2.63	4.20	260°	0.334	0.30	-5.28	0.367	0.36	-4.47
85°	1.000	2.65	4.23	0.998	2.64	4.21	265°	0.329	0.29	-5.41	0.370	0.36	-4.40
90°	1.000	2.65	4.23	0.999	2.64	4.22	270°	0.329	0.29	-5.42	0.373	0.37	-4.34
95°	0.998	2.64	4.21	1.000	2.65	4.23	275°	0.331	0.29	-5.38	0.375	0.37	-4.29
100°	0.994	2.62	4.18	1.000	2.65	4.23	280°	0.339	0.30	-5.16	0.377	0.38	-4.25
105°	0.989	2.59	4.14	1.000	2.65	4.23	285°	0.354	0.33	-4.79	0.378	0.38	-4.23
110°	0.982	2.55	4.07	1.000	2.65	4.23	290°	0.376	0.37	-4.27	0.378	0.38	-4.22
115°	0.973	2.51	3.99	1.000	2.65	4.23	295°	0.405	0.43	-3.63	0.383	0.39	-4.09
120°	0.962	2.45	3.90	0.999	2.65	4.23	300°	0.440	0.51	-2.89	0.398	0.42	-3.77
125°	0.950	2.39	3.78	0.996	2.63	4.20	305°	0.483	0.62	-2.10	0.421	0.47	-3.27
130°	0.935	2.32	3.65	0.991	2.60	4.15	310°	0.532	0.75	-1.25	0.454	0.55	-2.63
135°	0.920	2.24	3.51	0.983	2.56	4.08	315°	0.588	0.92	-0.38	0.495	0.65	-1.87
140°	0.906	2.18	3.38	0.972	2.50	3.98	320°	0.647	1.11	0.44	0.546	0.79	-1.02
145°	0.894	2.12	3.26	0.959	2.43	3.86	325°	0.699	1.29	1.12	0.604	0.97	-0.15
150°	0.884	2.07	3.16	0.943	2.35	3.72	330°	0.744	1.47	1.66	0.656	1.14	0.57
155°	0.876	2.03	3.08	0.924	2.26	3.55	335°	0.782	1.62	2.10	0.709	1.33	1.25
160°	0.870	2.00	3.02	0.903	2.16	3.35	340°	0.814	1.75	2.44	0.757	1.52	1.81
165°	0.865	1.98	2.97	0.880	2.05	3.12	345°	0.838	1.86	2.70	0.796	1.68	2.25
170°	0.862	1.97	2.94	0.854	1.93	2.86	350°	0.856	1.94	2.88	0.836	1.85	2.68
175°	0.861	1.96	2.93	0.825	1.80	2.56	355°	0.867	1.99	2.99	0.867	1.99	3.00

Polarization: Vertical
Maximum Field: 1.000 @ 103° True
Minimum Field: 0.362 @ 240° True
RMS: 0.783
Maximum ERP: 2.650 kW
Maximum Power Gain: 1.080 (0.334 dB)

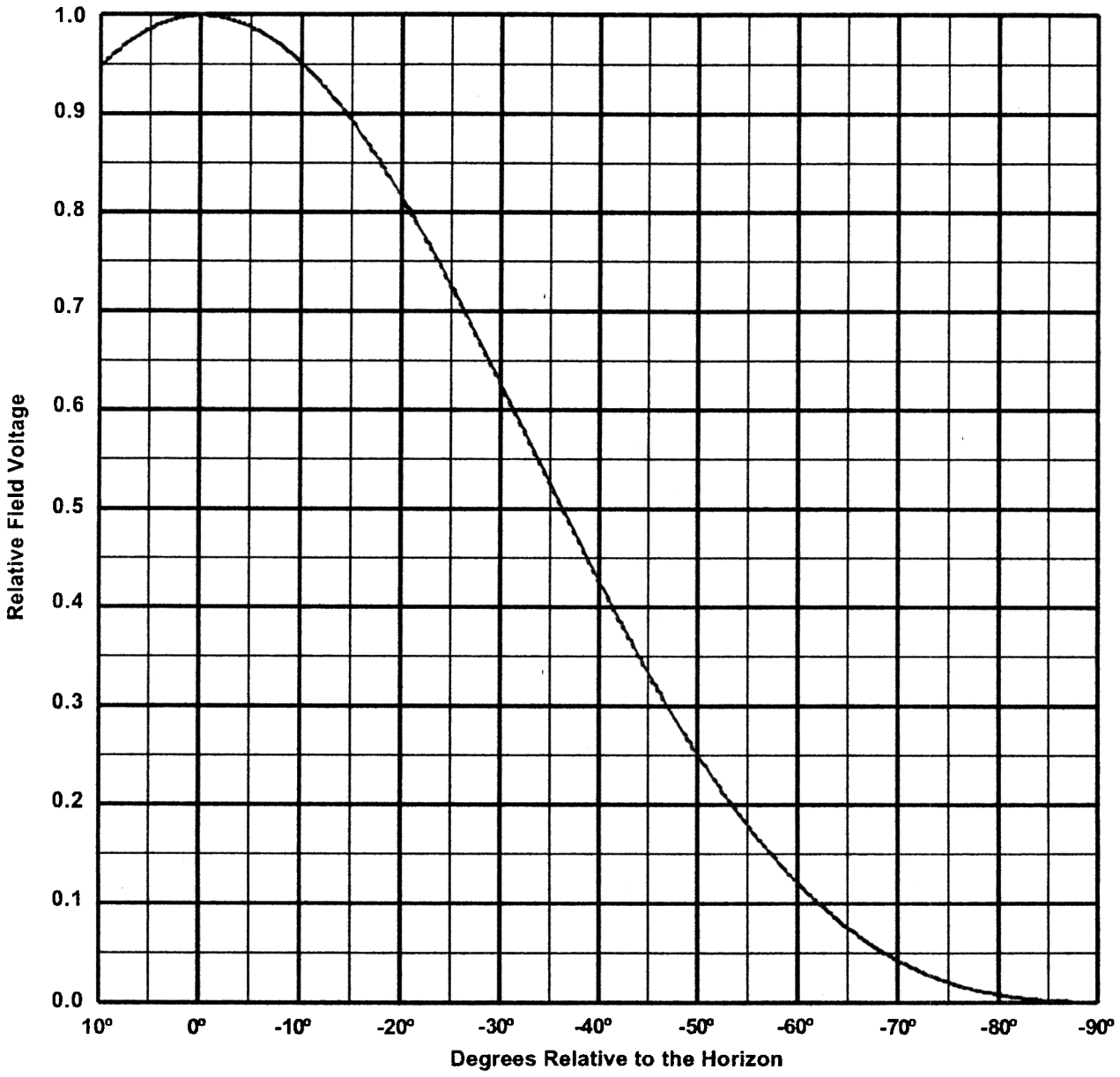
Total Input Power: 2.454 kW

ERI® Vertical Plane Relative Field Pattern

WLVG, Center Moriches, NY, 96.1 MHz

Figure#: 3 **Date: 10/18/02**

A 2 level, .5 wave-length spaced LP-2E-DA-HW directional antenna with 0° beam tilt, 0% null fill and a H/V maximum power ratio of 1.000



Vertical Polarization Gain:	Horizontal Polarization Gain:
Maximum: 1.080 (0.334 dB)	Maximum: 1.080 (0.334 dB)
Horizontal Plane: 1.080 (0.334 dB)	Horizontal Plane: 1.080 (0.334 dB)

Electronics Research, Inc. 7777 Gardner Rd. Chandler, IN 47601 Phone: (812) 925-6000 Fax: (812) 925-4030 http://www.eriinc.com/

Directional Antenna System
for
WLVG, Center Moriches, New York

(Continued)

ANTENNA SPECIFICATIONS

Antenna Type:	LP-2E-DA-HW
Frequency:	96.1 MHz
Number of Bays:	2

MECHANICAL SPECIFICATIONS

Mounting:	Standard
System length:	13 ft 9 in
Aperture length required:	21 ft.
Orientation:	90° true

Input flange to the antenna 1 5/8 inch female

ELECTRICAL SPECIFICATIONS
(For directional use)

Maximum horizontal ERP:	2.65 kW (4.232 dBk)
Horizontal maximum power gain:	1.080 (0.334 dB)
Maximum vertical ERP:	2.65 kW (4.232 dBk)
Vertical maximum power gain:	1.080 (0.334 dB)
Total input power:	2.454 kW (3.90 dBk)

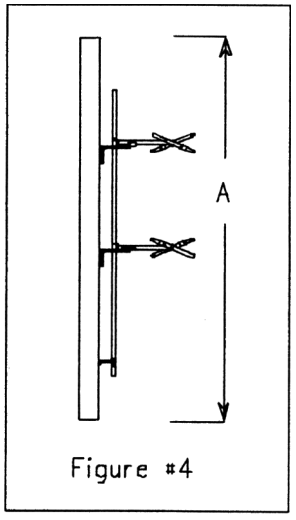
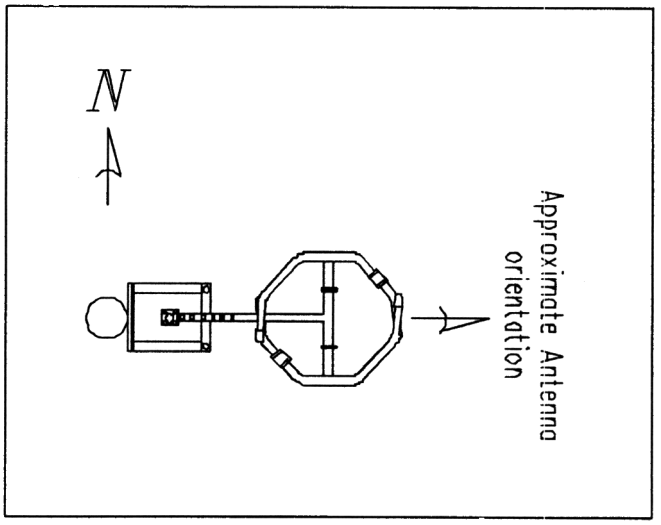


Figure #4



BROADCAST ENGINEERING
SERVICES

ROBERT C. ANDERSON
(631) 591-7007

ELECTROMEDIA SYSTEMS
PO Box 1197
Quogue, NY 11959

Way Broadcasting
449 Broadway
New York, NY 10013

2/17/03

To whom it may concern:

The ERI two bay antenna was assembled under my supervision and according to the manufacturers directions. The antenna was mounted on the tower and is positioned 90° East according to the surveyor.

Mr. Anderson has been active in broadcast engineering in the Long Island area for the past 23 years and is the holder of General Radiotelephone License # PG2-6633.

Regards,

Robert C. Anderson

EXHIBIT B2
APPLICATION FOR STATION LICENSE/
REQUEST FOR PROGRAM TEST AUTHORITY
WAY BROADCASTING, INC.
WLVG (FM) RADIO STATION
CH 241A - 96.1 MHZ - 2.65 KW (DA)
CENTER MORICHES, NEW YORK
February 2003

D'Amaro Engineering and Surveying, P.C.

P.O. BOX 1783
WEST BABYLON, N.Y. 11704

TEL: (631) 321-4488
FAX: (631) 321-4497

February 24, 2003

I.W. Limited Liability Company
3241 Route 112; Bldg. No.7
Medford, NY 11763

EXHIBIT B3
APPLICATION FOR STATION LICENSE/
REQUEST FOR PROGRAM TEST AUTHORITY
WAY BROADCASTING, INC.
WLVG (FM) RADIO STATION
CH 241A - 96.1 MHZ - 2.65 KW (DA)
CENTER MORICHES, NEW YORK
February 2003

RE: *WLVG Antenna*
Manorville, New York
Our Job. S03004
As-built antenna orientation

To Whom It May Concern:

This certifies that the antenna installed for WLVG-FM on top of the above-referenced tower had a measured orientation toward True North Azimuth 90 degrees (due east).

Instrument readings were made February 19, 2003 at a point approximately 1067 feet (325 m) from the tower. I estimate the precision in instrument position to be plus or minus 0.1 feet (3 cm) and the sighting precision to be plus or minus 3 feet (1 m) based on personal observation of the antenna-mounting rod through 30-power optics.

Four (4) measurements were made to the lunar trailing edge by 3-second theodolite, timepiece was calibrated to US Naval Observatory UTC-1 atomic clock through the Internet and handheld GPS receiver estimated latitude/longitude. The measurement range computed within 12 seconds of arc.

Final adjustment of the antenna was made on February 20, 2003. All work and computations were personally performed by the undersigned.

Please contact the undersigned if you have any questions.

Very truly yours,

Jerome T. D'Amaro
Professional Engineer & Land Surveyor
NYS License No. 064932 & 049684