TECHNICAL EXHIBIT
APPLICATION FOR AUXILIARY LICENSE
RADIO STATION WBLI(FM)
PATCHOGUE, NEW YORK
CH 291B 23 KW (MAX-DA) 132 M

Technical Statement

This Technical Exhibit, of which this statement is part, was prepared on behalf of radio station WBLI(FM) on Channel 291B at Patchogue, New York. WBLI(FM) has authorization for an auxiliary (stand-by) transmitting antenna with an antenna height above terrain (HAAT) to 132 meters and its effective radiated power to 23 kilowatts (kW) employing a directional antenna.[1] By this instant application, program test authority and station licensure is requested.

The Attachments contain the required directional antenna Proof-of-Performance, licensed surveyor affidavit and qualified engineer affidavit.

Charles A. Cooper

June 21, 2010

du Treil, Lundin & Rackley, Inc.
201 Fletcher Avenue
Sarasota, Florida 34237
941.329.6000

[1] See FCC Construction Permit BXPH-20081027ABK.

Figure 1

TECHNICAL EXHIBIT
APPLICATION FOR AUXILIARY LICENSE
RADIO STATION WBLI(FM)
PATCHOGUE, NEW YORK
CH 291B 23 KW (MAX-DA) 132 M

WBLI(FM) Auxiliary RF Transmission System Specifications

Description	System
Transmitter Power Output (13.5 kW):	11.3 dBk
Andrew Transmission Line Loss (HJ8-50A) 345 feet:	0.5 dB
ERI MP-2E-HW-DA-SP Antenna Gain (1.9 Power Gain):	2.8 dB
Maximum Effective Radiated Power (23 kW):	13.6 dBk

ATTACHMENT A

DIRECTIONAL ANTENNA
PROOF-OF-PERFORMANCE

ELECTRONICS RESEARCH, INC. ERI®

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 WBLI, Patchogue, New York

May 21, 2008

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 WBLI.

The antenna is the ERI model MP-4AC-DA-HW configuration. The circular polarized system consists of 4 half-wavelength spaced bays using one driven circular polarized radiating element per bay and two horizontal parasitic elements per bay. The antenna was mounted on the North 147 degrees East tower face with bracketry to provide an antenna orientation of North 147 degrees East. The antenna was tested on an 8' 7" face tower, which is the structure the station plans to use to support the array. All tests were performed on a frequency of 106.1 megahertz, which is the center of the FM broadcast channel assigned to WBLI.

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.

Directional Antenna System
Proposed For
WBLI, Patchogue, New York

(Continued)

DESCRIPTION OF THE TEST PROCEDURE

The test antenna consisted of two bay levels of the circular polarized system with the associated horizontal parasitic elements. 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 3 1/8 inch o.d. rigid coaxial line was used to feed the test antenna, and a section of 3 1/8 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 8' 7" face tower 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 a US Digital angle position indicator. The resolution of this angle position indicator is one-hundredth of a degree.

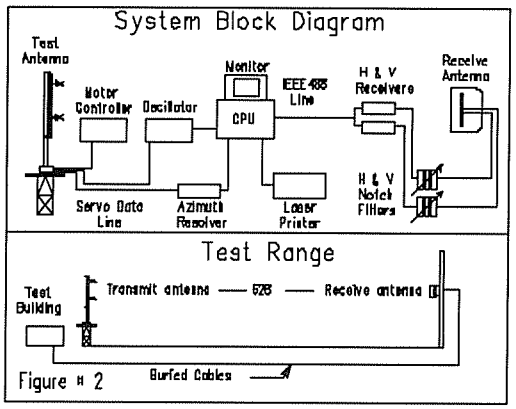


Figure # 2

The antenna under test was operated in the transmitting mode and fed from a HP8657D signal generator. The frequency of the signal source was set at 106.1 MHz and was constantly monitored by a Rohde & Schwarz ESVD measuring receiver.

(Continued)

A broadband 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 a Rohde & Schwarz 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 4 half-wavelength spaced bays using one driven circular polarized radiating element per bay and two horizontal parasitic elements 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 MP-4AC-DA-HW array is to be mounted on the North 147 degrees East tower face of the 8' 7" face tower at a bearing of North 147 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 49 kilowatts (16.902 dBk).

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

Directional Antenna System
Proposed For
WBLI, Patchogue, New York

(Continued)

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 28 feet 10 in.

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.

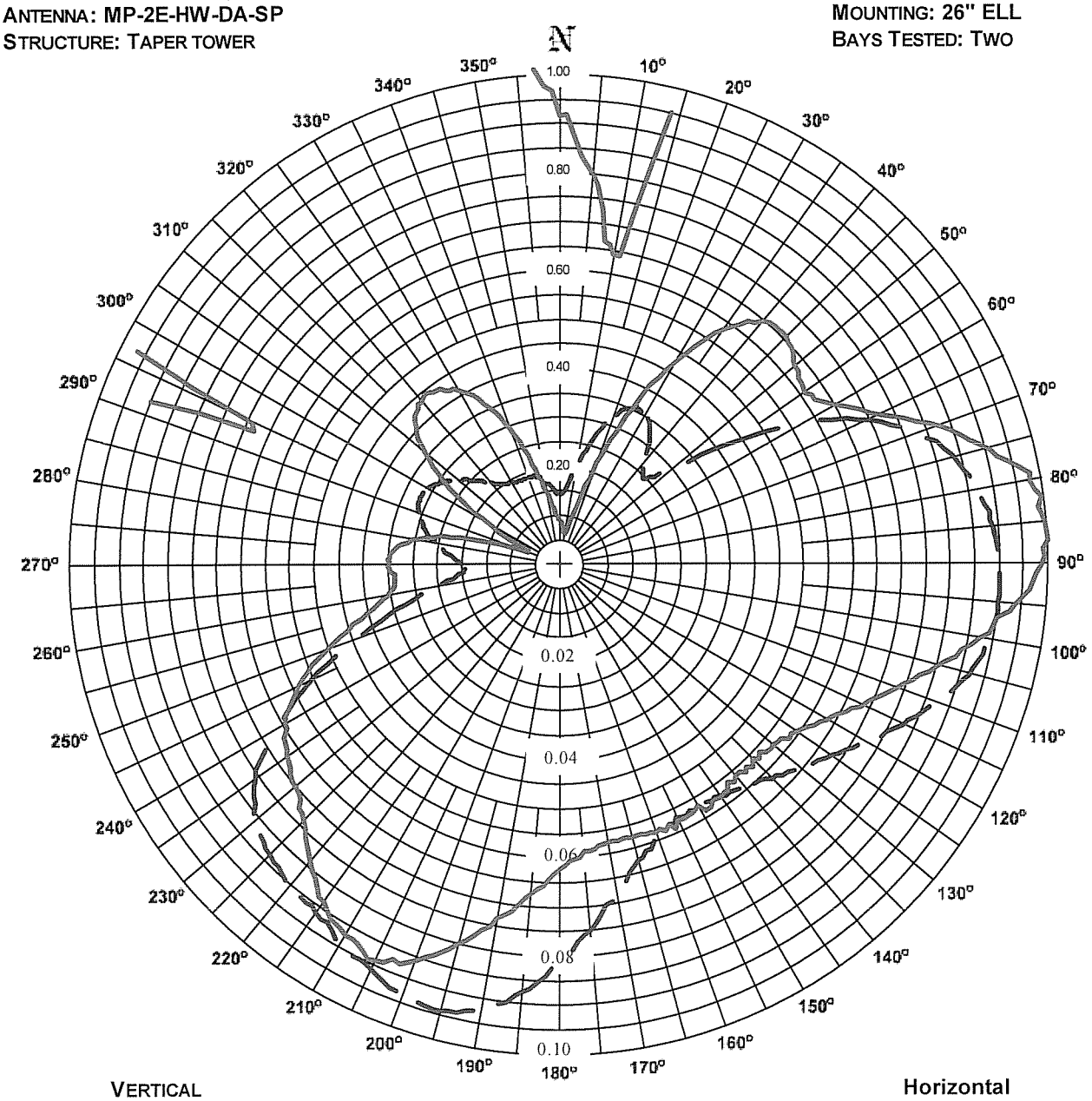
ELECTRONICS RESEARCH, INC.

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 NO: 17S
STATION: WBLI
LOCATION: PATCHOGUE, NY
ANTENNA: MP-2E-HW-DA-SP
STRUCTURE: TAPER TOWER

DATE: 5/20/2008
FREQUENCY: 106.1 MHz
ORIENTATION: 147° TRUE
MOUNTING: 26" ELL
BAYS TESTED: TWO



VERTICAL

RMS: 0.593
MAXIMUM: 0.941 @ 195° TRUE
MINIMUM: 0.144 @ 359° TRUE

10X Scale

Horizontal

RMS: 0.593
Maximum: 1.000 @ 86° True
Minimum: 0.064 @ 10° True

COMMENTS: MEASURED PATTERNS OF THE HORIZONTAL AND VERTICAL COMPONENTS. TWO-BAY TEST. LEFT HAND LOOPS.

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: WBLI
Location: Patchogue, NY
Frequency: 106.1 MHz

Antenna: MP-2E-HW-DA-SP
Orientation: 147° True
Tower: Taper tower

Figure: 17S
Date: 5/20/2008
Reference: WBLI17S.fig

Angle	Horizontal			Vertical			Angle	Horizontal			Vertical		
	Field	kW	dBk	Field	kW	dBk		Field	kW	dBk	Field	kW	dBk
0°	0.092	0.20	-7.10	0.146	0.49	-3.09	180°	0.622	8.98	9.53	0.812	15.28	11.84
5°	0.080	0.15	-8.30	0.160	0.59	-2.26	185°	0.673	10.51	10.21	0.874	17.71	12.48
10°	0.064	0.10	-10.20	0.205	0.98	-0.11	190°	0.732	12.43	10.94	0.921	19.69	12.94
15°	0.111	0.28	-5.48	0.268	1.66	2.20	195°	0.797	14.74	11.68	0.941	20.52	13.12
20°	0.223	1.16	0.63	0.326	2.46	3.91	200°	0.856	17.00	12.30	0.934	20.24	13.06
25°	0.350	2.84	4.53	0.355	2.92	4.65	205°	0.886	18.22	12.60	0.909	19.15	12.82
30°	0.485	5.45	7.36	0.356	2.93	4.67	210°	0.870	17.56	12.44	0.890	18.38	12.64
35°	0.586	7.97	9.01	0.323	2.42	3.83	215°	0.837	16.24	12.10	0.864	17.31	12.38
40°	0.649	9.76	9.89	0.271	1.70	2.30	220°	0.788	14.40	11.58	0.848	16.68	12.22
45°	0.658	10.03	10.01	0.251	1.47	1.66	225°	0.737	12.60	11.00	0.834	16.15	12.08
50°	0.630	9.19	9.63	0.322	2.41	3.81	230°	0.701	11.42	10.57	0.815	15.43	11.88
55°	0.612	8.70	9.39	0.440	4.49	6.52	235°	0.678	10.65	10.27	0.754	13.19	11.20
60°	0.652	9.85	9.93	0.587	8.00	9.03	240°	0.646	9.67	9.85	0.681	10.75	10.31
65°	0.725	12.20	10.86	0.698	11.30	10.53	245°	0.589	8.04	9.05	0.559	7.25	8.60
70°	0.827	15.87	12.00	0.786	14.33	11.56	250°	0.506	5.95	7.74	0.446	4.62	6.64
75°	0.913	19.34	12.86	0.838	16.30	12.12	255°	0.419	4.08	6.10	0.344	2.75	4.39
80°	0.977	22.16	13.45	0.868	17.47	12.42	260°	0.356	2.93	4.67	0.256	1.52	1.82
85°	0.995	22.99	13.61	0.890	18.38	12.64	265°	0.338	2.65	4.23	0.206	0.98	-0.07
90°	0.986	22.57	13.53	0.900	18.80	12.74	270°	0.348	2.82	4.49	0.197	0.90	-0.48
95°	0.936	20.35	13.08	0.902	18.89	12.76	275°	0.341	2.70	4.31	0.221	1.14	0.55
100°	0.874	17.72	12.48	0.890	18.38	12.64	280°	0.305	2.16	3.33	0.253	1.49	1.72
105°	0.799	14.81	11.70	0.870	17.55	12.44	285°	0.227	1.20	0.77	0.283	1.86	2.70
110°	0.734	12.49	10.96	0.829	15.93	12.02	290°	0.129	0.38	-4.17	0.305	2.16	3.34
115°	0.682	10.80	10.33	0.775	13.94	11.44	295°	0.069	0.11	-9.55	0.315	2.31	3.63
120°	0.632	9.28	9.67	0.723	12.11	10.83	300°	0.162	0.61	-2.16	0.313	2.27	3.55
125°	0.594	8.19	9.13	0.681	10.75	10.31	305°	0.273	1.72	2.36	0.297	2.04	3.10
130°	0.571	7.58	8.79	0.643	9.58	9.81	310°	0.358	2.98	4.73	0.273	1.72	2.36
135°	0.558	7.24	8.59	0.616	8.82	9.45	315°	0.420	4.10	6.12	0.245	1.39	1.43
140°	0.562	7.34	8.65	0.590	8.08	9.07	320°	0.438	4.45	6.48	0.221	1.14	0.55
145°	0.581	7.83	8.93	0.577	7.71	8.87	325°	0.436	4.41	6.44	0.204	0.96	-0.17
150°	0.569	7.51	8.75	0.567	7.47	8.73	330°	0.412	3.93	5.94	0.193	0.86	-0.64
155°	0.575	7.68	8.85	0.569	7.50	8.75	335°	0.365	3.09	4.89	0.191	0.85	-0.72
160°	0.579	7.79	8.91	0.593	8.15	9.11	340°	0.297	2.04	3.10	0.192	0.85	-0.70
165°	0.577	7.72	8.87	0.626	9.10	9.59	345°	0.215	1.07	0.29	0.186	0.81	-0.94
170°	0.574	7.65	8.83	0.685	10.90	10.37	350°	0.151	0.53	-2.77	0.174	0.71	-1.52
175°	0.585	7.93	8.99	0.746	12.92	11.11	355°	0.111	0.28	-5.46	0.156	0.57	-2.47

Polarization:	Horizontal	Vertical
Maximum Field:	1.000 @ 86° True	0.941 @ 195° True
Minimum Field:	0.064 @ 10° True	0.144 @ 359° True
RMS:	0.593	0.593
Maximum ERP:	23.200 kW	20.524 kW
Maximum Power Gain:	1.896 (2.778 dB)	1.677 (2.246 dB)

Total Input Power: 12.238 kW

ATTACHMENT B

LICENSED SURVEYOR AFFIDAVIT

FAUSER ASSOCIATES p.c.

Land Surveying

Land Planning

Site Planning

Environmental Planning

Civil Engineering

405 Fort Salonga Road

Northport New York 11768

Telephone: (631) 499-7774

Fax: (631) 499-7814

www.fauserassociates.com

February 11, 2010

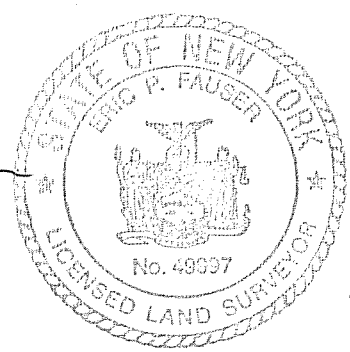
Mr. Ted Ronneburger
Chief Engineer
WBLI (FM), Cox Radio Inc., Long Island
West Babylon, NY 11704

RE: Cox Radio Inc. (WBLI) broadcasting tower site in Farmingville, NY

Dear Mr. Ronneburger,

On January 11, 2010, Fauser Associates P.C. dispatched a survey crew to verify the installation of a directional FM broadcasting antenna located in Farmingville, NY, for radio station WBLI (FM), FCC tower registration number: 10033317. The antenna was found to be installed as per the furnished installation plans provided by Electronics Research Inc., specifically with all the auxiliary (2-bay) antenna elements oriented at an azimuth of 147 degrees from True North.

Sincerely,
Fauser Associates, P.C.



Eric P. Fauser, P.L.S.

EPF/klf

ATTACHMENT C

ENGINEERING AFFIDAVIT

December 19, 2009

AFFIDAVIT

Under my supervision, the WBLI (Patchogue, NY) auxiliary antenna, an Electronics Research Inc. model MP-2E-HW-DA-SP, was installed and adjusted to the manufacturers and FCC specifications.

Theodore Ronneburger

Theodore Ronneburger
Chief Engineer
Cox Radio Inc., Long Island
555 Sunrise Highway
West Babylon, NY 11704
631-587-1023

I am the Chief Engineer for WBLI and my broadcast engineering experience spans a total of 47 years. I have been the Chief Engineer of radio stations in New York City (WMCA and WXLO), Washington D.C. (WRC and WKYS), Atlanta, GA (WCNN, WALR, WALR-FM, and WFOM) and currently in Nassau-Suffolk, NY (WBLI, WBAB, WHFM). I have built and maintained numerous radio station transmitter sites. My experience and expertise is well known among my peers.