

TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
STATION WLOX-DT (FACILITY ID 13995)  
BILOXI, MISSISSIPPI

SEPTEMBER 25, 2009

CH 39 715 KW (MAX-DA) 366 M

TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
STATION WLOX-DT (FACILITY ID 13995)  
BILOXI, MISSISSIPPI  
CH 39 715 KW (MAX-DA) 366 M

Table of Contents

Technical Narrative

Figure 1      Antenna and Supporting Structure

Figure 2      Predicted FCC Coverage Contours

Appendix      Directional Antenna Pattern

TECHNICAL EXHIBIT  
APPLICATION FOR CONSTRUCTION PERMIT  
STATION WLOX-DT (FACILITY ID 13995)  
BILOXI, MISSISSIPPI  
CH 39 715 KW (MAX-DA) 366 M

Technical Narrative

This Technical Exhibit supports an application for digital television (DTV) station WLOX-DT to cover its recently granted rulemaking proposal (see Report and Order in MB Docket No. 09-125).

Proposed Facilities

Station WLOX-DT proposes to operate DTV channel 39 with a directional antenna maximum effective radiated power (ERP) of 715 kilowatts and antenna height above average terrain (HAAT) of 366 meters. These are the identical facilities to the recently granted rulemaking. Thus, no allocation studies are included. They are also the same as the WLOX-DT pre-transition operation<sup>1</sup>, except for a 1-second coordinate correction. The transmitter site coordinates are:

30° 43' 22" North Latitude  
89° 05' 28" West Longitude

A sketch of antenna and pertinent elevations are included as Figure 1. Figure 2 is a map showing the DTV predicted coverage contours. The predicted 43 dBu contour will encompass all of Augusta. The Augusta city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

Radiofrequency Electromagnetic Field Exposure

The proposed WLOX-DT facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. The

---

<sup>1</sup> See BLCDT-20030205ACM

radiation center for the proposed DTV antenna is located 342 meters above ground level with a maximum ERP of 715 kW. A conservative relative field value of 0.1 was assumed for the calculation (see Appendix). The calculated power density at a point 2 meters above ground level will not exceed  $0.002 \text{ mW/cm}^2$ . This is less than 5% of the FCC's recommended limit of  $0.42 \text{ mW/cm}^2$  for channel 39 for an "uncontrolled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the station is at reduced power or shut down. The proposed WLOX-DT operation appears to be otherwise categorically excluded from environmental processing.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner.



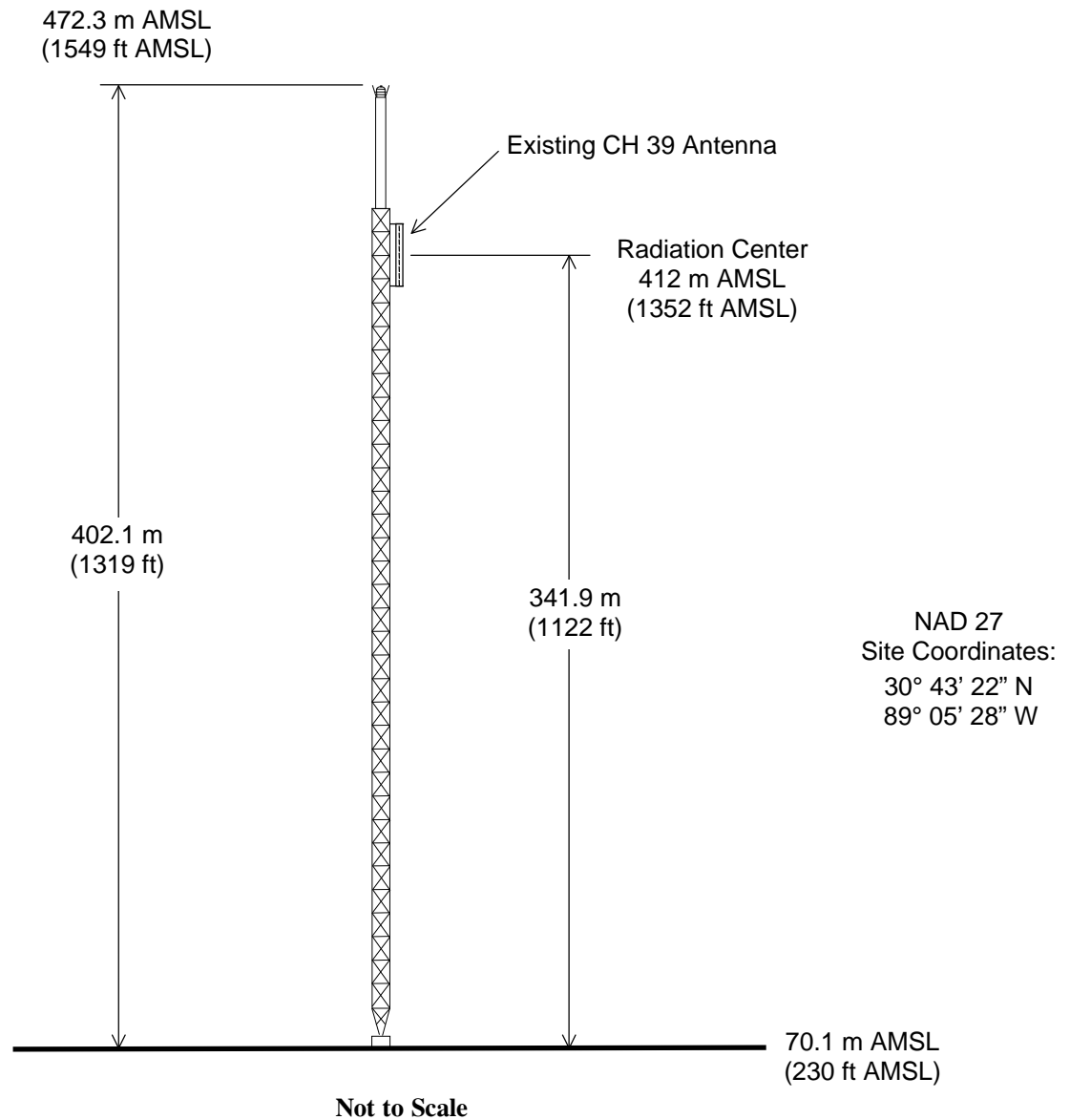
Jonathan N. Edwards

du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, Florida 34237  
(941) 329-6000  
JON@DLR.COM

September 25, 2009



Registration No. 1039874



## ANTENNA AND SUPPORTING STRUCTURE

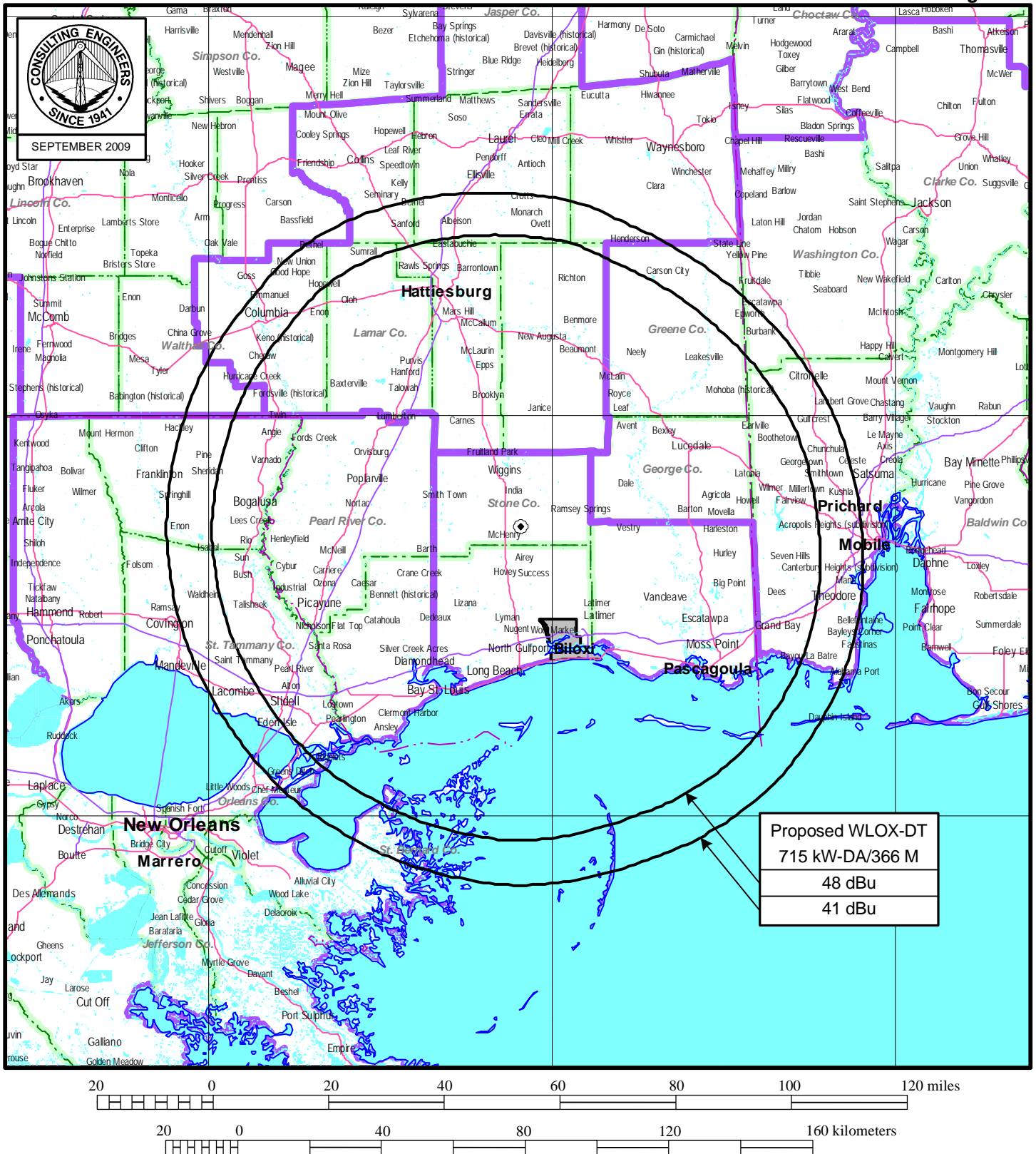
STATION WLOX-DT

BILOXI, MISSISSIPPI

CH 39 715 KW (MAX-DA) 366 M

du Treil, Lundin &amp; Rackley, Inc. Sarasota, Florida

**Figure 2**



## **PREDICTED COVERAGE CONTOURS**

**STATION WLOX-DT**

**BILOXI, MISSISSIPPI**

**CH 39 715 kW (MAX-DA) 366 M**

du Treil, Lundin & Rackley, Inc Sarasota, Florida

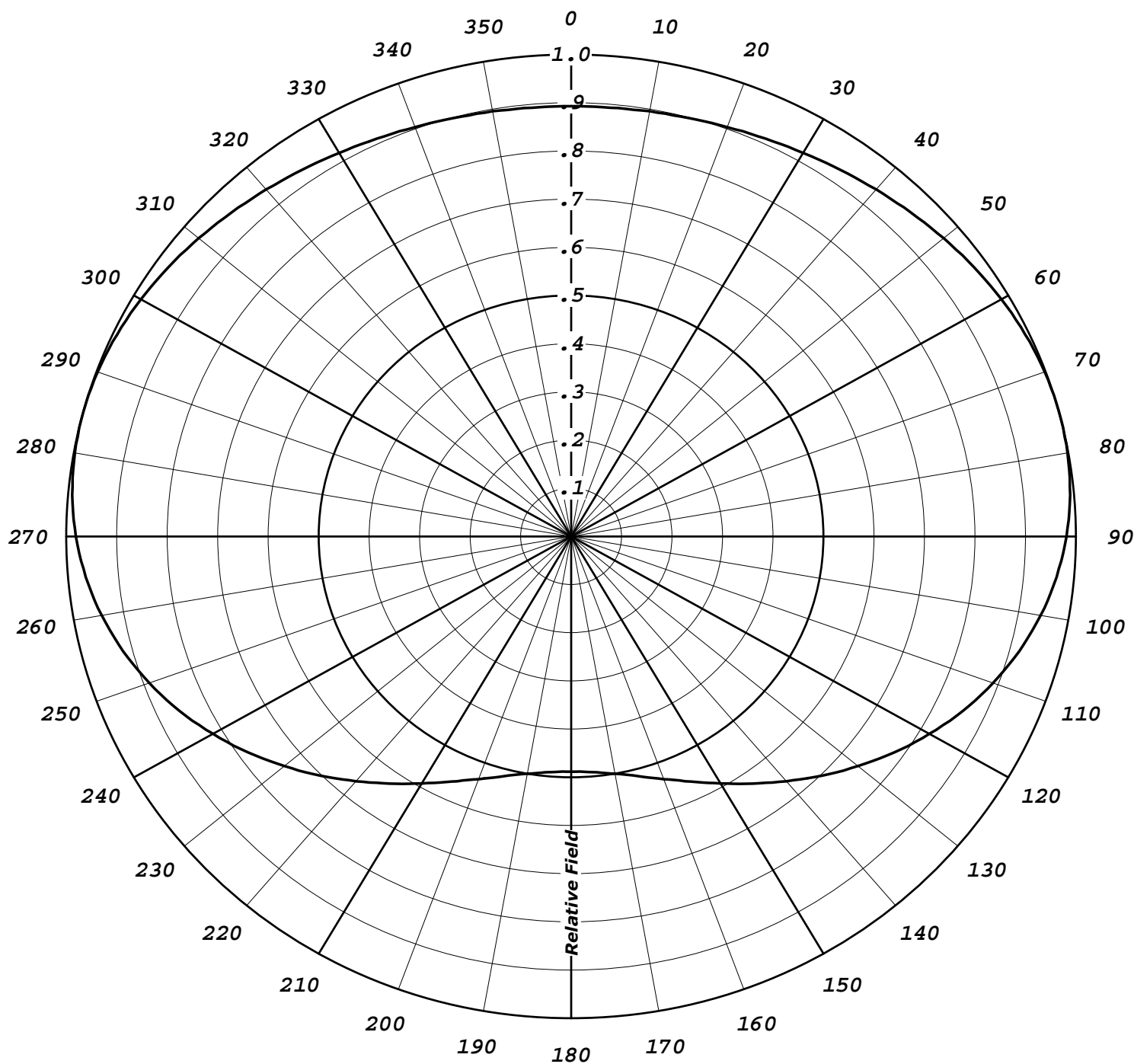
# APPENDIX

## MANUFACTURER ANTENNA SPECIFICATIONS

**ANDREW**  
**AZIMUTH PATTERN**

Type: ATL-WC

	Numeric	dBd
Directivity:	<u>1.40</u>	<u>( 1.46 )</u>
Peak(s) At:	<u></u>	
Polarization:	<u>Horizontal</u>	
Channel:	<u>39 (Digital)</u>	
Location:	<u>Biloxi, MS</u>	







# TABULATED DATA FOR AZIMUTH PATTERN

TYPE : ATL-WC

Angle Field	dB	Angle Field	dB	Angle Field	dB	Angle Field	dB
0	0.893 -0.98	110	0.889 -1.02	220	0.663 -3.57	330	0.919 -0.73
2	0.893 -0.98	112	0.876 -1.15	222	0.678 -3.38	332	0.916 -0.76
4	0.893 -0.98	114	0.863 -1.28	224	0.694 -3.17	334	0.912 -0.80
6	0.894 -0.97	116	0.849 -1.42	226	0.710 -2.97	336	0.909 -0.83
8	0.894 -0.97	118	0.834 -1.58	228	0.726 -2.78	338	0.907 -0.85
10	0.896 -0.95	120	0.819 -1.73	230	0.741 -2.60	340	0.904 -0.88
12	0.897 -0.94	122	0.804 -1.89	232	0.757 -2.42	342	0.902 -0.90
14	0.898 -0.93	124	0.789 -2.06	234	0.773 -2.24	344	0.900 -0.92
16	0.900 -0.92	126	0.773 -2.24	236	0.789 -2.06	346	0.898 -0.93
18	0.902 -0.90	128	0.757 -2.42	238	0.804 -1.89	348	0.897 -0.94
20	0.904 -0.88	130	0.741 -2.60	240	0.819 -1.73	350	0.896 -0.95
22	0.907 -0.85	132	0.726 -2.78	242	0.834 -1.58	352	0.894 -0.97
24	0.909 -0.83	134	0.710 -2.97	244	0.849 -1.42	354	0.894 -0.97
26	0.912 -0.80	136	0.694 -3.17	246	0.863 -1.28	356	0.893 -0.98
28	0.916 -0.76	138	0.678 -3.38	248	0.876 -1.15	358	0.893 -0.98
30	0.919 -0.73	140	0.663 -3.57	250	0.889 -1.02	360	0.893 -0.98
32	0.923 -0.70	142	0.648 -3.77	252	0.901 -0.91		
34	0.927 -0.66	144	0.633 -3.97	254	0.913 -0.79		
36	0.931 -0.62	146	0.619 -4.17	256	0.924 -0.69		
38	0.935 -0.58	148	0.605 -4.36	258	0.934 -0.59		
40	0.940 -0.54	150	0.592 -4.55	260	0.944 -0.50		
42	0.944 -0.50	152	0.579 -4.75	262	0.953 -0.42		
44	0.949 -0.45	154	0.567 -4.93	264	0.961 -0.35		
46	0.953 -0.42	156	0.556 -5.10	266	0.968 -0.28		
48	0.958 -0.37	158	0.545 -5.27	268	0.975 -0.22		
50	0.963 -0.33	160	0.536 -5.42	270	0.981 -0.17		
52	0.967 -0.29	162	0.527 -5.56	272	0.986 -0.12		
54	0.972 -0.25	164	0.519 -5.70	274	0.990 -0.09		
56	0.976 -0.21	166	0.511 -5.83	276	0.993 -0.06		
58	0.980 -0.18	168	0.505 -5.93	278	0.996 -0.03		
60	0.984 -0.14	170	0.500 -6.02	280	0.998 -0.02		
62	0.988 -0.10	172	0.496 -6.09	282	0.999 -0.01		
64	0.991 -0.08	174	0.492 -6.16	284	1.000 0.00		
66	0.994 -0.05	176	0.490 -6.20	286	1.000 0.00		
68	0.996 -0.03	178	0.488 -6.23	288	0.999 -0.01		
70	0.998 -0.02	180	0.488 -6.23	290	0.998 -0.02		
72	0.999 -0.01	182	0.488 -6.23	292	0.996 -0.03		
74	1.000 0.00	184	0.490 -6.20	294	0.994 -0.05		
76	1.000 0.00	186	0.492 -6.16	296	0.991 -0.08		
78	0.999 -0.01	188	0.496 -6.09	298	0.988 -0.10		
80	0.998 -0.02	190	0.500 -6.02	300	0.984 -0.14		
82	0.996 -0.03	192	0.505 -5.93	302	0.980 -0.18		
84	0.993 -0.06	194	0.511 -5.83	304	0.976 -0.21		
86	0.990 -0.09	196	0.519 -5.70	306	0.972 -0.25		
88	0.986 -0.12	198	0.527 -5.56	308	0.967 -0.29		
90	0.981 -0.17	200	0.536 -5.42	310	0.963 -0.33		
92	0.975 -0.22	202	0.545 -5.27	312	0.958 -0.37		
94	0.968 -0.28	204	0.556 -5.10	314	0.953 -0.42		
96	0.961 -0.35	206	0.567 -4.93	316	0.949 -0.45		
98	0.953 -0.42	208	0.579 -4.75	318	0.944 -0.50		
100	0.944 -0.50	210	0.592 -4.55	320	0.940 -0.54		
102	0.934 -0.59	212	0.605 -4.36	322	0.935 -0.58		
104	0.924 -0.69	214	0.619 -4.17	324	0.931 -0.62		
106	0.913 -0.79	216	0.633 -3.97	326	0.927 -0.66		
108	0.901 -0.91	218	0.648 -3.77	328	0.923 -0.70		



# ANDREW

## ELEVATION PATTERN

Type: 25H4H

Directivity:      Numeric      dBd

    Main Lobe:      25.00      (13.98)

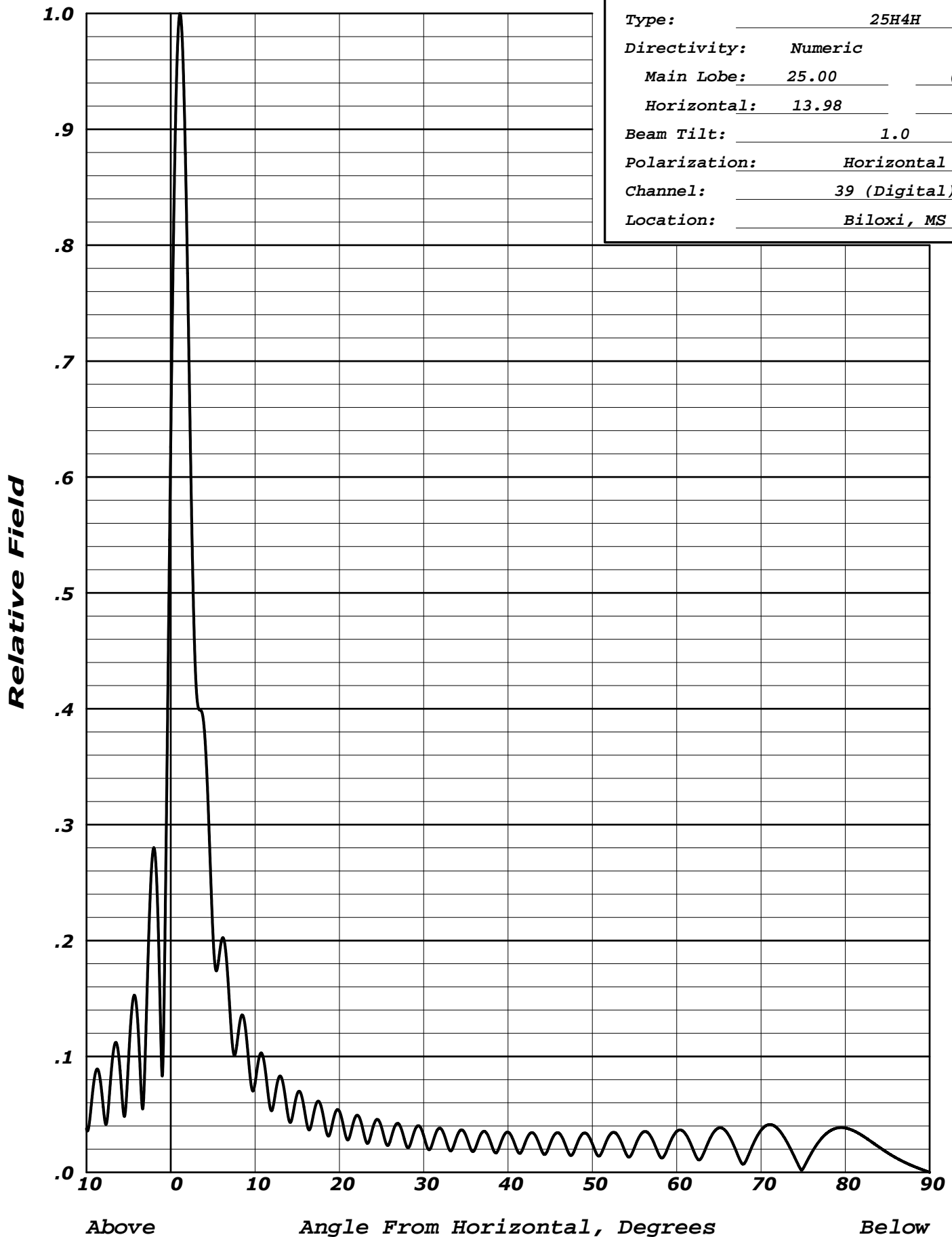
    Horizontal:      13.98      (11.46)

Beam Tilt: 1.0

Polarization: Horizontal

Channel: 39 (Digital)

Location: Biloxi, MS





## TABULATED DATA FOR ELEVATION PATTERN

TYPE : ATW25H4H

Angle Field dB -5 To 10 In 0.25 Increments	Angle Field dB 10 To 90 In 0.5 Increments	Angle Field dB	Angle Field dB
-5.00 0.098 -20.16	8.75 0.130 -17.74	35.00 0.032 -29.95	62.50 0.011 -38.90
-4.75 0.129 -17.81	9.00 0.115 -18.80	35.50 0.022 -33.35	63.00 0.013 -37.49
-4.50 0.148 -16.58	9.25 0.095 -20.45	36.00 0.019 -34.45	63.50 0.022 -33.26
-4.25 0.152 -16.35	9.50 0.077 -22.27	36.50 0.028 -30.97	64.00 0.030 -30.51
-4.00 0.138 -17.19	9.75 0.070 -23.08	37.00 0.035 -29.12	64.50 0.036 -28.97
-3.75 0.107 -19.38	10.00 0.077 -22.26	37.50 0.033 -29.53	65.00 0.038 -28.33
-3.50 0.068 -23.32	10.50 0.100 -20.02	38.00 0.025 -32.19	65.50 0.038 -28.47
-3.25 0.059 -24.53	11.00 0.098 -20.18	38.50 0.017 -35.50	66.00 0.034 -29.38
-3.00 0.108 -19.30	11.50 0.070 -23.05	39.00 0.022 -32.97	66.50 0.028 -31.19
-2.75 0.171 -15.33	12.00 0.053 -25.44	39.50 0.032 -30.00	67.00 0.019 -34.28
-2.50 0.227 -12.87	12.50 0.072 -22.83	40.00 0.035 -29.20	67.50 0.011 -39.46
-2.25 0.266 -11.49	13.00 0.083 -21.61	40.50 0.030 -30.50	68.00 0.007 -42.54
-2.00 0.280 -11.05	13.50 0.069 -23.22	41.00 0.020 -33.83	68.50 0.015 -36.72
-1.75 0.264 -11.58	14.00 0.046 -26.84	41.50 0.017 -35.47	69.00 0.023 -32.71
-1.50 0.215 -13.35	14.50 0.051 -25.90	42.00 0.025 -32.03	69.50 0.031 -30.28
-1.25 0.140 -17.10	15.00 0.068 -23.38	42.50 0.033 -29.72	70.00 0.036 -28.80
-1.00 0.083 -21.60	15.50 0.066 -23.55	43.00 0.034 -29.41	70.50 0.040 -27.99
-0.75 0.169 -15.44	16.00 0.047 -26.49	43.50 0.028 -31.08	71.00 0.041 -27.70
-0.50 0.316 -10.00	16.50 0.037 -28.61	44.00 0.019 -34.63	71.50 0.040 -27.88
-0.25 0.476 -6.45	17.00 0.053 -25.59	44.50 0.016 -35.74	72.00 0.038 -28.50
0.00 0.632 -3.99	17.50 0.061 -24.23	45.00 0.025 -32.11	72.50 0.033 -29.62
0.25 0.771 -2.26	18.00 0.052 -25.72	45.50 0.032 -29.79	73.00 0.027 -31.32
0.50 0.883 -1.08	18.50 0.034 -29.43	46.00 0.034 -29.37	73.50 0.020 -33.85
0.75 0.960 -0.35	19.00 0.037 -28.71	46.50 0.029 -30.76	74.00 0.013 -37.82
1.00 0.997 -0.03	19.50 0.051 -25.81	47.00 0.020 -34.08	74.50 0.005 -45.51
1.25 0.992 -0.07	20.00 0.053 -25.56	47.50 0.015 -36.77	75.00 0.003 -49.62
1.50 0.949 -0.46	20.50 0.039 -28.13	48.00 0.021 -33.49	75.50 0.010 -39.84
1.75 0.872 -1.19	21.00 0.028 -31.07	48.50 0.030 -30.52	76.00 0.017 -35.49
2.00 0.772 -2.25	21.50 0.039 -28.25	49.00 0.034 -29.39	76.50 0.023 -32.88
2.25 0.661 -3.60	22.00 0.049 -26.22	49.50 0.032 -29.92	77.00 0.028 -31.15
2.50 0.556 -5.10	22.50 0.045 -26.96	50.00 0.025 -32.17	77.50 0.032 -29.96
2.75 0.472 -6.53	23.00 0.030 -30.35	50.50 0.016 -35.95	78.00 0.035 -29.15
3.00 0.421 -7.52	23.50 0.027 -31.53	51.00 0.016 -36.19	78.50 0.037 -28.64
3.25 0.401 -7.93	24.00 0.039 -28.11	51.50 0.024 -32.41	79.00 0.038 -28.36
3.50 0.399 -7.98	24.50 0.046 -26.80	52.00 0.032 -30.01	79.50 0.039 -28.27
3.75 0.395 -8.06	25.00 0.039 -28.23	52.50 0.035 -29.23	80.00 0.038 -28.34
4.00 0.380 -8.41	25.50 0.025 -31.88	53.00 0.032 -29.89	80.50 0.037 -28.56
4.25 0.349 -9.15	26.00 0.027 -31.51	53.50 0.025 -32.10	81.00 0.036 -28.91
4.50 0.304 -10.35	26.50 0.038 -28.31	54.00 0.016 -35.91	81.50 0.034 -29.38
4.75 0.252 -11.96	27.00 0.042 -27.53	54.50 0.014 -37.20	82.00 0.032 -29.96
5.00 0.206 -13.72	27.50 0.034 -29.42	55.00 0.021 -33.36	82.50 0.029 -30.63
5.25 0.178 -14.97	28.00 0.022 -33.09	55.50 0.030 -30.51	83.00 0.027 -31.41
5.50 0.175 -15.13	28.50 0.026 -31.63	56.00 0.035 -29.21	83.50 0.024 -32.27
5.75 0.187 -14.55	29.00 0.037 -28.57	56.50 0.035 -29.20	84.00 0.022 -33.23
6.00 0.199 -14.01	29.50 0.040 -28.00	57.00 0.030 -30.44	84.50 0.019 -34.28
6.25 0.202 -13.89	30.00 0.031 -30.04	57.50 0.022 -33.13	85.00 0.017 -35.42
6.50 0.192 -14.34	30.50 0.020 -33.84	58.00 0.014 -37.12	85.50 0.015 -36.66
6.75 0.170 -15.39	31.00 0.024 -32.33	58.50 0.014 -37.14	86.00 0.013 -38.00
7.00 0.141 -16.99	31.50 0.035 -29.15	59.00 0.022 -33.16	86.50 0.011 -39.48
7.25 0.115 -18.79	32.00 0.038 -28.43	59.50 0.030 -30.42	87.00 0.009 -41.11
7.50 0.101 -19.89	32.50 0.031 -30.21	60.00 0.035 -29.04	87.50 0.007 -42.96
7.75 0.106 -19.52	33.00 0.020 -33.95	60.50 0.037 -28.75	88.00 0.006 -45.13
8.00 0.120 -18.44	33.50 0.022 -33.24	61.00 0.034 -29.47	88.50 0.004 -47.82
8.25 0.132 -17.60	34.00 0.032 -29.86	61.50 0.027 -31.31	89.00 0.003 -51.48
8.50 0.136 -17.34	34.50 0.037 -28.72	62.00 0.019 -34.59	89.50 0.001 -57.59