



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN APPLICATION  
FOR CONSTRUCTION PERMIT FOR DIGITAL  
FLASH-CUT FOR WSBS-CA  
FACILITY ID NUMBER: 167208  
WSBS-CA - MIAMI, FLORIDA  
LPDTV - CH. 50 - 15.0 kW - 234 meters AGL**

Prepared for: WSBS Licensing, Inc.

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Professional Engineer in the Commonwealth of Virginia, License No. 7418, and in the State of New York, License No. 63418.

**GENERAL**

This office has been authorized by WSBS Licensing, Inc., licensee of WSBS-CA, channel 50, Miami, Florida, to prepare this statement and associated exhibits in support of an application for a construction permit to flash-cut from analog to digital operation on channel 50.

**PROPOSED TECHNICAL FACILITY**

The proposed digital flash-cut will include replacement of the existing directional antenna with a new ERI circular polarized directional antenna, a model ALP16L4-CSP-50 utilizing an electrical beam tilt of 1.0 degrees below the horizontal plane. The proposed antenna replacement will maintain the same 234 meters above ground level (AGL) radiation centerline as the existing antenna. The horizontal azimuth pattern orientation will be rotated 270 degrees clockwise from the polar pattern shown on page 5, and tabulated

on page 7, of the antenna specification. The proposed digital effective radiated power (ERP) level is 15 kW. The proposed transmitter power output (TPO) level is 1.88 kW.

## **ALLOCATION CONSIDERATIONS**

### **DTV Allocation Considerations**

A study was performed, according to Section 73.6018, to determine if the instant proposal is predicted to cause any level of prohibited interference to any DTV stations, expansion construction permits or DTV allotments. Results show that the proposal is predicted to cause no new interference in excess of 0.5% to any DTV station, expansion construction permit or allotment.

### **Low Power TV and TV Translator Protection Considerations**

As required by Section 73.6019 it was determined that the instant proposal meets the requirements therein. The study using the Commission's application processing software, DLPTV, shows that the proposal is predicted to cause no prohibited interference to any relevant LPTV facility.

### **Class A Television Allocation Considerations**

As required in Section 73.6017, protection of class A TV stations, it was determined that the proposal is predicted to cause no prohibited interference to any class A LPTV stations located within any distance which could be affected by the proposed translator facility.

### **Land Mobile Station Protection**

Section 73.6020 requires protection be afforded to land mobile stations which share UHF television channels 14 to 20. The proposed translator facility will operate on channel

50. No land mobile station will, or can, be affected by the translator operation as proposed herein.

**Digital Low Power TV and TV Translator Protection**

Section 73.6019 required protection be afforded to these stations. The facility herein proposed is predicted to cause no prohibited interference to any class A LPTV stations located within any distance which could be affected by the proposed translator facility.

**PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.684 of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the National Geophysical Data Center Thirty Second Point Database (TPG-0050) as prescribed in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data, # 1224225. Exhibit 1 contains the predicted LPDTV Noise Limited (51 dBu) contour.

**BLANKETING AND INTERMODULATION INTERFERENCE**

A number of broadcast and non-broadcast facilities are located within 10 km of the WSBS-CA transmitter/antenna site. The applicant recognizes its responsibility to remedy complaints of interference created by this proposal in accordance with applicable Rules.

**RADIO FREQUENCY IMPACT & OCCUPATIONAL SAFETY**

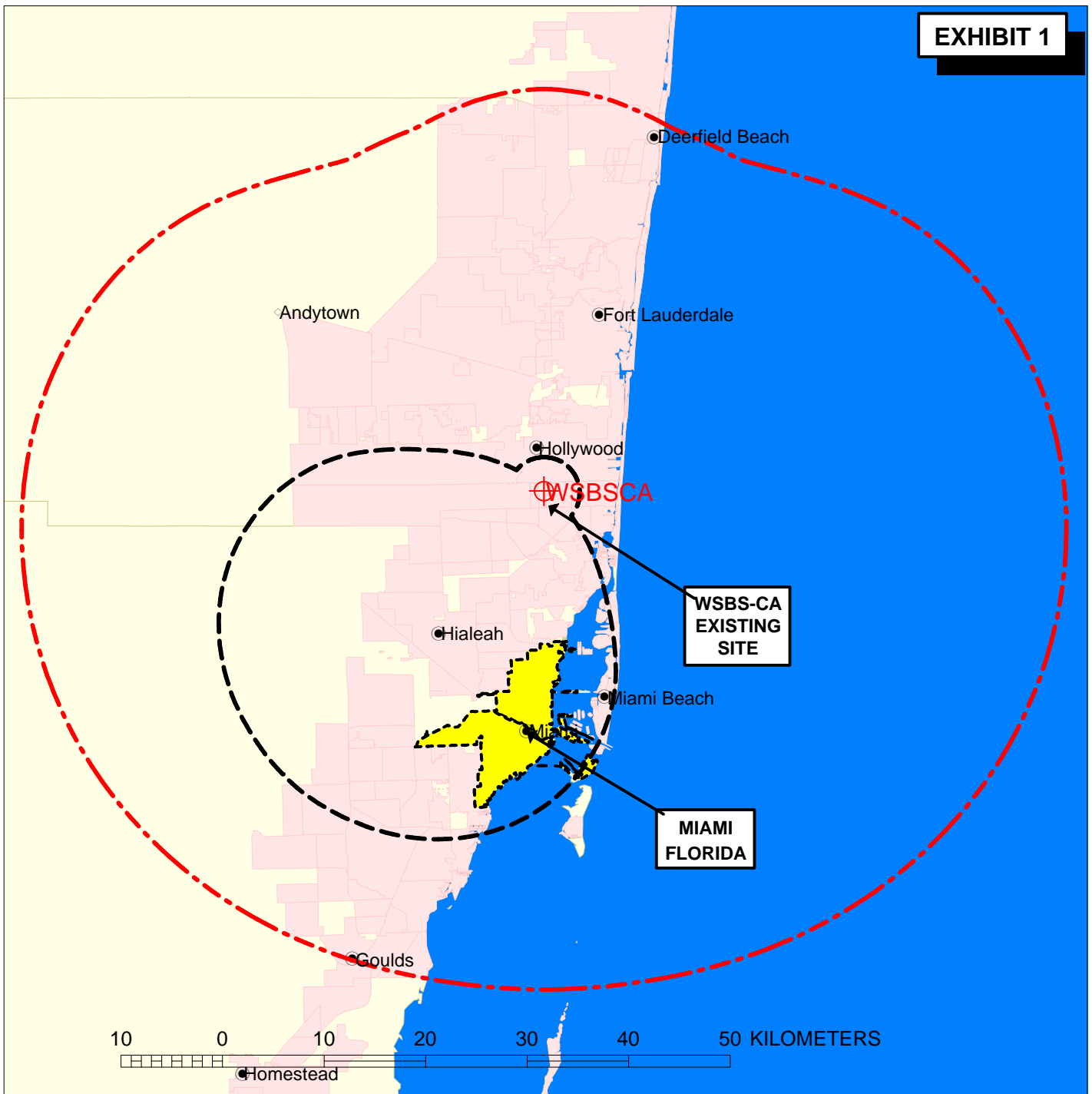
The WSBS-CA facility is to be located on an existing multi-facility broadcast tower at a height above ground of 234 meters. Utilizing the methodology set forth in OET Bulletin 65, the predicted power density contribution of the WSBS-CA digital operation at two meters AGL is less than 0.2% of the FCC's guidelines for public exposure in an uncontrolled environment. Each and every station located at the site is aware of safety precautions necessary when work is being conducted on towers at or near the site. The applicant will reduce power or suspend operation as necessary to ensure the safety and protection of workers at the site.

**SUMMARY**

It is submitted that the instant application for construction permit to flash-cut WSBS-CA from analog to digital operation on channel 50, as described herein, complies with applicable Rules, Regulations and Policies of the Federal Communications Commission. This statement, FCC Form 301-CA and the attached exhibits were prepared by me, or under my direct supervision, and are believed to be true and correct to the best of my own knowledge and belief.

DATED: January 15, 2010

  
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John E. Hidle, P.E.  

## PREDICTED PROTECTED SERVICE CONTOURS

WSBS-CA - Channel 50, MIAMI, FLORIDA  
DIGITAL FLASH-CUT FOR WSBS-CA

-----  
F(50,50) - 74 dBu Analog Contour  
Channel 50 - 126 kW ERP  
234 meters AGL  
1,850,985 persons

-----  
F(50,90) - 51 dBu Digital Contour  
Channel 50 - DA 15 kW ERP  
234 meters AGL  
3,770,134 persons

JANUARY 2010

**CARL T. JONES**  
CORPORATION

***PRELIMINARY SPECIFICATION FOR  
ERI CARINA™ CIRCULARLY POLARIZED  
COAXIAL SLOTTED ARRAY ANTENNA***

*Prepared For  
Spanish Broadcasting System  
Channel 50  
Miami  
November 9, 2009*

**ANTENNA TYPE:  
ALP16L4-CSP-50**

**SPECIFICATION NO:**



## **PRELIMINARY SPECIFICATION FOR ERI CARINA™ CIRCULARLY POLARIZED COAXIAL SLOTTED ARRAY ANTENNA**

### **ELECTRICAL CHARACTERISTICS:**

CHANNEL:	DTV:	50
FREQUENCY RANGE:	DTV:	686.00 - 692.00 MHz
AZIMUTH PATTERN NUMBER:	Hor Pol:	ALP-P
	Ver Pol:	ALP-P
ELEVATION PATTERN NUMBER:	Hor Pol:	ALP16L4
	Ver Pol:	ALP16L4
AZIMUTH DIRECTIVITY:	Hor Pol:	1.88 (2.74 dB)
	Ver Pol:	1.88 (2.74 dB)
ELEVATION DIRECTIVITY:	Hor Pol:	16.59 (12.20 dBd)
	Ver Pol:	16.59 (12.20 dBd)
ELEVATION GAIN:	Hor Pol:	8.29 (9.19 dBd)
	Ver Pol:	8.29 (9.19 dBd)
PEAK POWER GAIN:	Hor Pol:	15.59 (11.93 dBd)
	Ver Pol:	15.59 (11.93 dBd)
GAIN AT HORIZONTAL:	Hor Pol:	9.83 (9.93 dBd)
	Ver Pol:	9.83 (9.93 dBd)
GAIN RATIO: VER POL/HOR POL		1.00
ELECTRICAL BEAM TILT:		-1.00 Degrees
INPUT POWER REQUIRED:		0.962 kW Average Power, 8VSB Digital
MAXIMUM INPUT POWER:		4.00 kW Average Power
INPUT TYPE:		1-5/8" EIA
ANTENNA VSWR (MAXIMUM):	DTV:	1.10 Over 6 MHz of Channel

*Preliminary, subject to final design and review.*

## PRELIMINARY SPECIFICATION FOR ERI CARINA™ CIRCULARLY POLARIZED COAXIAL SLOTTED ARRAY ANTENNA

### MECHANICAL CHARACTERISTICS:

#### MOUNTING CONFIGURATION:

*\*(Tower Interface supplied and installed by others.)*

Side Mount

HEIGHT OF ANTENNA:

32.8 feet

HEIGHT OF CENTER OF  
RADIATION:

16.4 feet

OVERALL HEIGHT (A):

32.8 feet

DEICING:

Unpressurized Slot Cover Radome Enclosure

RADOME DIAMETER (C):

CONTACT ERI

RADOME COLOR:

WHITE

CLIMBING DEVICE:

NOT APPLICABLE

CALCULATED WEIGHT<sup>1</sup>:

250 lbs.

ANTENNA AREA<sup>3</sup>:

FRONT AREA:

$C_A A_C$ : 32.5 square feet

$A_C$ : 27.1 square feet

SIDE AREA:

$C_A A_C$ : 17.1 square feet

$A_C$ : 14.3 square feet

***This antenna is designed to be supported by a structure that can resist the antenna base reactions and which provides a support that is rigid in the three translational and three rotational degrees of freedom.***

<sup>1</sup> Calculated weight is based on the PRELIMINARY design of the antenna. The actual weight of the antenna will be within  $\pm 10\%$  of the calculated weight. The actual weight will be given in the technical manual that accompanies the antenna.

<sup>3</sup> Antenna Area is calculated per EIA/TIA-RS222-F.

**Note:** Localized conditions may require higher wind speed specifications than TIA/EIA specifications. Check with local authorities to verify wind speed requirements.

Preliminary, subject to final design and review.



## Broadcast Antenna System

### Power Analysis

### Spanish Broadcasting System Channel 50 Miami ALP16L4-CSP-50

#### ANTENNA PARAMETERS

##### Azimuth Directivity:

Hor. Pol: 1.88 (2.74 dBd)  
Ver. Pol: 1.88 (2.74 dBd)

##### Elevation Directivity:

Hor. Pol: 16.59 (12.20 dBd)  
Ver. Pol: 16.59 (12.20 dBd)

#### TRANSMISSION LINE:

##### VERTICAL RUN:

Type: HJ11-50  
Length, ft: 767 ft.  
Attenuation, dB/100 ft: 0.345 dB/100 ft.

##### HORIZONTAL RUN:

Type: HJ11-50  
Length, ft: 80 ft.  
Attenuation, dB/100 ft: 0.345 dB/100 ft.

Line Efficiency: 51.06 %

##### ERP:

Hor. Pol: 15.00 kW (11.76 dBk)  
Ver. Pol: 15.00 kW (11.76 dBk)

##### POWER GAIN:

Hor. Pol: 15.59 (11.93 dBd)  
Ver. Pol: 15.59 (11.93 dBd)

##### ANTENNA INPUT:

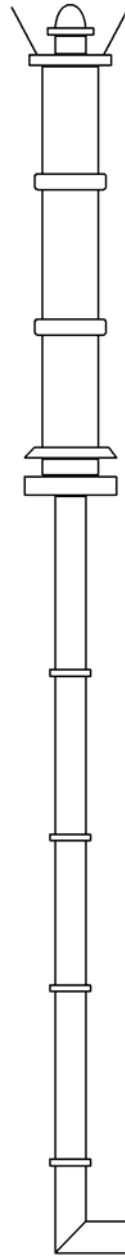
kW: 0.96  
dBk: -0.17

##### LINE LOSS:

kW: 0.92  
dB: 2.92

##### TRANSMITTER POWER:

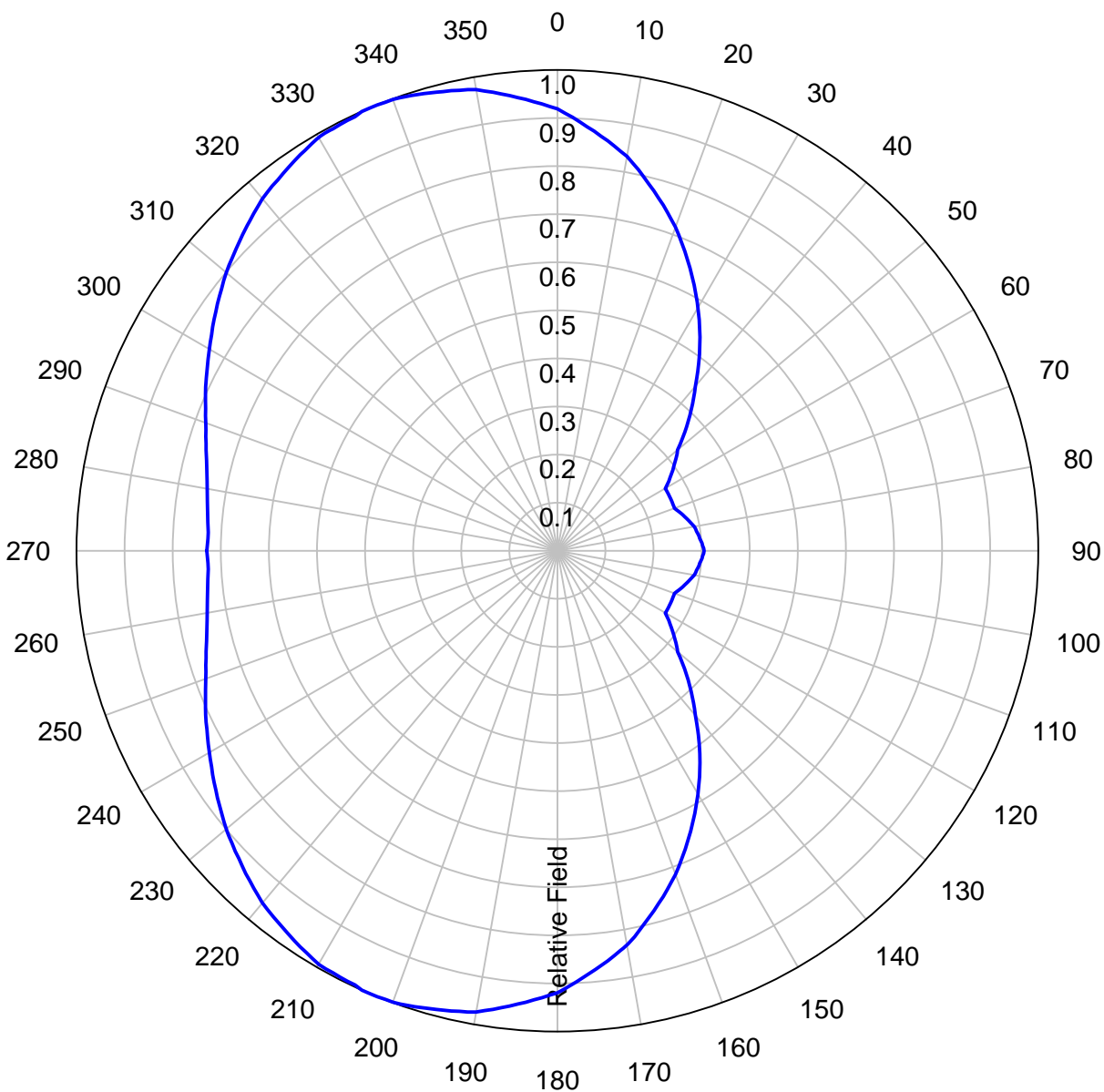
kW: 1.88  
dBk: 2.75



Preliminary, subject to final design and review.

**AZIMUTH PATTERN****Type:****ALP-P****Directivity:****Numeric****1.88****dBd****2.74****Peak(s) at:****Channel:****50****Location:****Miami****Polarization:****Horizontal**

Note: Pattern shape and directivity may vary with channel and mouting configuration.



*Preliminary, subject to final design and review.*

## TABULATED DATA FOR AZIMUTH PATTERN

Type: ALP-P

PolarizationHorizontal

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.919	-0.73	92	0.302	-10.40	184	0.941	-0.53	276	0.732	-2.71
2	0.902	-0.90	94	0.299	-10.49	186	0.952	-0.43	278	0.735	-2.67
4	0.884	-1.07	96	0.296	-10.57	188	0.963	-0.33	280	0.739	-2.63
6	0.867	-1.24	98	0.292	-10.69	190	0.974	-0.23	282	0.745	-2.56
8	0.850	-1.41	100	0.289	-10.78	192	0.979	-0.18	284	0.752	-2.48
10	0.833	-1.59	102	0.283	-10.96	194	0.984	-0.14	286	0.760	-2.38
12	0.810	-1.83	104	0.277	-11.15	196	0.990	-0.09	288	0.769	-2.28
14	0.786	-2.09	106	0.271	-11.34	198	0.995	-0.04	290	0.778	-2.18
16	0.763	-2.35	108	0.265	-11.54	200	0.999	-0.01	292	0.789	-2.06
18	0.740	-2.62	110	0.259	-11.73	202	1.000	0.00	294	0.801	-1.93
20	0.717	-2.89	112	0.259	-11.73	204	1.000	0.00	296	0.813	-1.80
22	0.690	-3.22	114	0.259	-11.73	206	0.996	-0.03	298	0.824	-1.68
24	0.664	-3.56	116	0.259	-11.73	208	0.994	-0.05	300	0.836	-1.56
26	0.637	-3.92	118	0.259	-11.73	210	0.993	-0.06	302	0.848	-1.43
28	0.611	-4.28	120	0.259	-11.73	212	0.985	-0.13	304	0.861	-1.30
30	0.585	-4.66	122	0.273	-11.28	214	0.978	-0.19	306	0.874	-1.17
32	0.557	-5.08	124	0.286	-10.87	216	0.970	-0.26	308	0.886	-1.05
34	0.529	-5.53	126	0.299	-10.49	218	0.963	-0.33	310	0.899	-0.92
36	0.502	-5.99	128	0.313	-10.09	220	0.955	-0.40	312	0.910	-0.82
38	0.474	-6.48	130	0.326	-9.74	222	0.944	-0.50	314	0.921	-0.71
40	0.446	-7.01	132	0.350	-9.12	224	0.933	-0.60	316	0.933	-0.60
42	0.422	-7.49	134	0.374	-8.54	226	0.921	-0.71	318	0.944	-0.50
44	0.398	-8.00	136	0.398	-8.00	228	0.910	-0.82	320	0.955	-0.40
46	0.374	-8.54	138	0.422	-7.49	230	0.899	-0.92	322	0.963	-0.33
48	0.350	-9.12	140	0.446	-7.01	232	0.886	-1.05	324	0.970	-0.26
50	0.326	-9.74	142	0.474	-6.48	234	0.874	-1.17	326	0.978	-0.19
52	0.313	-10.09	144	0.502	-5.99	236	0.861	-1.30	328	0.985	-0.13
54	0.299	-10.49	146	0.529	-5.53	238	0.848	-1.43	330	0.993	-0.06
56	0.286	-10.87	148	0.557	-5.08	240	0.836	-1.56	332	0.994	-0.05
58	0.273	-11.28	150	0.585	-4.66	242	0.824	-1.68	334	0.996	-0.03
60	0.259	-11.73	152	0.611	-4.28	244	0.813	-1.80	336	1.000	0.00
62	0.259	-11.73	154	0.637	-3.92	246	0.801	-1.93	338	1.000	0.00
64	0.259	-11.73	156	0.664	-3.56	248	0.789	-2.06	340	0.999	-0.01
66	0.259	-11.73	158	0.690	-3.22	250	0.778	-2.18	342	0.995	-0.04
68	0.259	-11.73	160	0.717	-2.89	252	0.769	-2.28	344	0.990	-0.09
70	0.259	-11.73	162	0.740	-2.62	254	0.760	-2.38	346	0.984	-0.14
72	0.265	-11.54	164	0.763	-2.35	256	0.752	-2.48	348	0.979	-0.18
74	0.271	-11.34	166	0.786	-2.09	258	0.745	-2.56	350	0.974	-0.23
76	0.277	-11.15	168	0.810	-1.83	260	0.739	-2.63	352	0.963	-0.33
78	0.283	-10.96	170	0.833	-1.59	262	0.735	-2.67	354	0.952	-0.43
80	0.289	-10.78	172	0.850	-1.41	264	0.732	-2.71	356	0.941	-0.53
82	0.292	-10.69	174	0.867	-1.24	266	0.728	-2.76	358	0.930	-0.63
84	0.296	-10.57	176	0.884	-1.07	268	0.727	-2.77	360	0.919	-0.73
86	0.299	-10.49	178	0.902	-0.90	270	0.729	-2.75			
88	0.302	-10.40	180	0.919	-0.73	272	0.727	-2.77			
90	0.305	-10.31	182	0.930	-0.63	274	0.728	-2.76			

Preliminary, subject to final design and review.

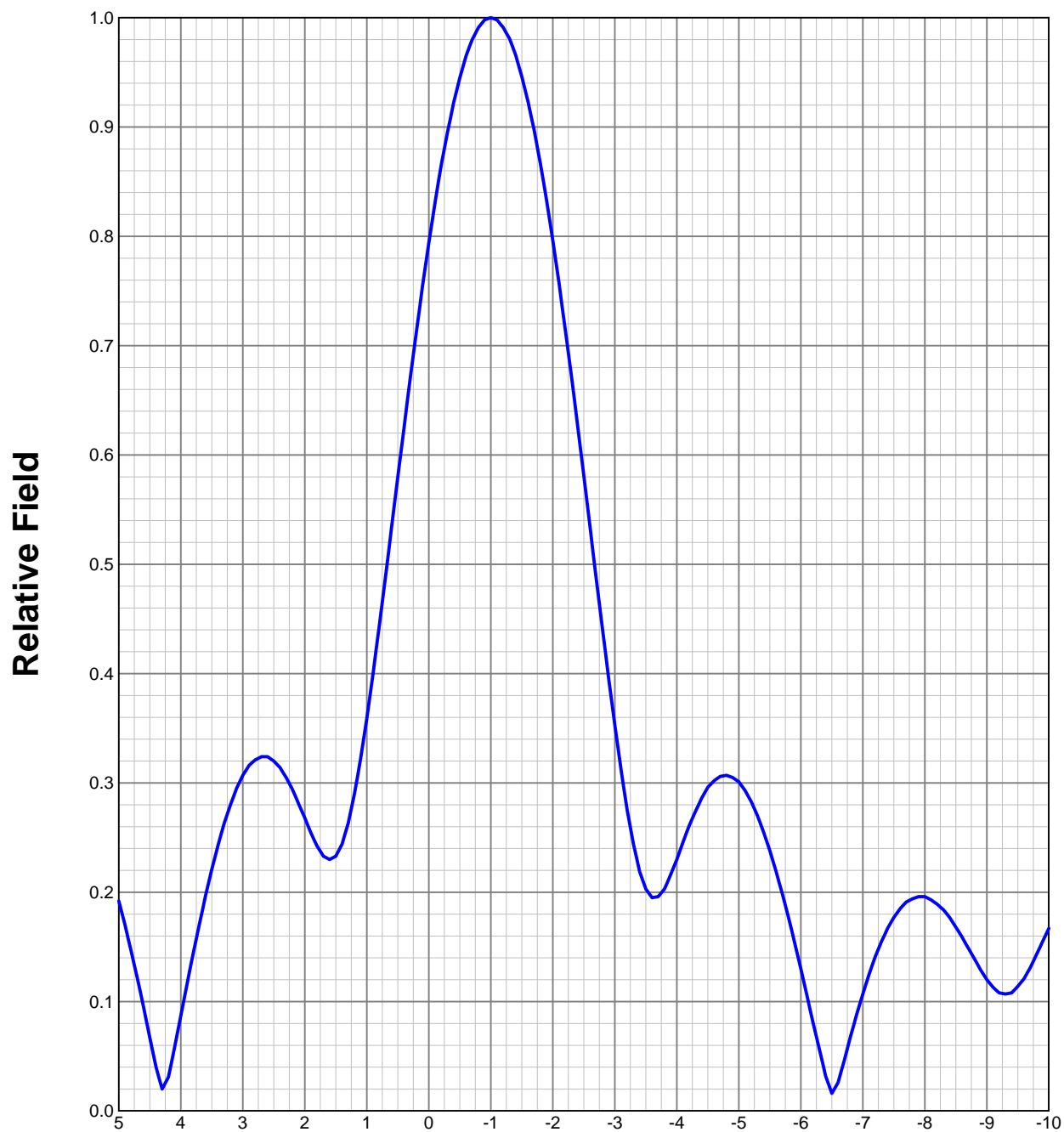
## **TABULATED DATA FOR AZIMUTH PATTERN FCC FILING FORMAT**

Type: ALP-P

PolarizationHorizontal

<b>ANGLE</b>	<b>FIELD</b>	<b>ERP (kW)</b>	<b>ERP (dBk)</b>
0	0.919	12.669	11.027
10	0.833	10.408	10.174
20	0.717	7.711	8.871
30	0.585	5.133	7.104
40	0.446	2.984	4.748
50	0.326	1.594	2.025
60	0.259	1.006	0.027
70	0.259	1.006	0.027
80	0.289	1.253	0.979
90	0.305	1.395	1.447
100	0.289	1.253	0.979
110	0.259	1.006	0.027
120	0.259	1.006	0.027
130	0.326	1.594	2.025
140	0.446	2.984	4.748
150	0.585	5.133	7.104
160	0.717	7.711	8.871
170	0.833	10.408	10.174
180	0.919	12.669	11.027
190	0.974	14.230	11.532
200	0.999	14.970	11.752
210	0.993	14.791	11.700
220	0.955	13.681	11.361
230	0.899	12.123	10.836
240	0.836	10.484	10.205
250	0.778	9.079	9.581
260	0.739	8.192	9.134
270	0.729	7.972	9.016
280	0.739	8.192	9.134
290	0.778	9.079	9.581
300	0.836	10.484	10.205
310	0.899	12.123	10.836
320	0.955	13.681	11.361
330	0.993	14.791	11.700
340	0.999	14.970	11.752
350	0.974	14.230	11.532

*Preliminary, subject to final design and review.*

**ELEVATION PATTERN****Type:****ALP16L4****Channel:****50****Directivity:****Numeric****dBd****Location:****Miami****Main Lobe:****16.59****12.20****Beam Tilt:****-1.00****Horizontal:****10.46****10.19****Polarization:****Horizontal***Preliminary, subject to final design and review.*

## TABULATED DATA FOR ELEVATION PATTERN

Type: ALP16L4

PolarizationHorizontal

ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB	ANGLEFIELD	dB
5.00	0.192	-14.33	-6.75	0.057	-24.88	-27.00	0.040	-27.96	-50.50
4.75	0.134	-17.49	-7.00	0.107	-19.41	-27.50	0.036	-28.87	-51.00
4.50	0.067	-23.48	-7.25	0.148	-16.59	-28.00	0.026	-31.70	-51.50
4.25	0.026	-31.87	-7.50	0.177	-15.04	-28.50	0.014	-37.08	-52.00
4.00	0.087	-21.21	-7.75	0.193	-14.31	-29.00	0.004	-47.96	-52.50
3.75	0.158	-16.05	-8.00	0.196	-14.15	-29.50	0.001	-60.00	-53.00
3.50	0.221	-13.11	-8.25	0.186	-14.59	-30.00	0.000	-40.00	-53.50
3.25	0.272	-11.32	-8.50	0.168	-15.49	-30.50	0.006	-44.44	-54.00
3.00	0.307	-10.26	-8.75	0.144	-16.83	-31.00	0.013	-37.72	-54.50
2.75	0.323	-9.83	-9.00	0.120	-18.42	-31.50	0.018	-34.89	-55.00
2.50	0.320	-9.90	-9.25	0.107	-19.37	-32.00	0.020	-33.98	-55.50
2.25	0.299	-10.47	-9.50	0.114	-18.86	-32.50	0.021	-33.56	-56.00
2.00	0.268	-11.44	-9.75	0.137	-17.27	-33.00	0.033	-29.63	-56.50
1.75	0.237	-12.49	-10.00	0.167	-15.55	-33.50	0.058	-24.73	-57.00
1.50	0.233	-12.65	-10.50	0.222	-13.07	-34.00	0.089	-21.01	-57.50
1.25	0.276	-11.17	-11.00	0.248	-12.11	-34.50	0.121	-18.34	-58.00
1.00	0.359	-8.90	-11.50	0.240	-12.40	-35.00	0.148	-16.59	-58.50
0.75	0.466	-6.64	-12.00	0.202	-13.89	-35.50	0.166	-15.60	-59.00
0.50	0.580	-4.73	-12.50	0.147	-16.65	-36.00	0.171	-15.34	-59.50
0.25	0.692	-3.20	-13.00	0.089	-21.01	-36.50	0.162	-15.81	-60.00
0.00	0.794	-2.00	-13.50	0.042	-27.54	-37.00	0.141	-17.02	-60.50
-0.25	0.880	-1.11	-14.00	0.012	-38.42	-37.50	0.111	-19.09	-61.00
-0.50	0.945	-0.49	-14.50	0.000	-40.00	-38.00	0.077	-22.27	-61.50
-0.75	0.986	-0.13	-15.00	0.010	-40.00	-38.50	0.049	-26.20	-62.00
-1.00	1.000	0.00	-15.50	0.024	-32.40	-39.00	0.042	-27.54	-62.50
-1.25	0.986	-0.12	-16.00	0.036	-28.87	-39.50	0.054	-25.35	-63.00
-1.50	0.946	-0.48	-16.50	0.038	-28.40	-40.00	0.065	-23.74	-63.50
-1.75	0.881	-1.10	-17.00	0.027	-31.37	-40.50	0.068	-23.35	-64.00
-2.00	0.796	-1.98	-17.50	0.005	-46.02	-41.00	0.062	-24.15	-64.50
-2.25	0.694	-3.18	-18.00	0.028	-31.06	-41.50	0.047	-26.56	-65.00
-2.50	0.581	-4.72	-18.50	0.056	-25.04	-42.00	0.028	-31.06	-65.50
-2.75	0.464	-6.67	-19.00	0.074	-22.62	-42.50	0.008	-41.94	-66.00
-3.00	0.353	-9.04	-19.50	0.076	-22.38	-43.00	0.013	-37.72	-66.50
-3.25	0.260	-11.72	-20.00	0.064	-23.88	-43.50	0.027	-31.37	-67.00
-3.50	0.203	-13.85	-20.50	0.058	-24.73	-44.00	0.036	-28.87	-67.50
-3.75	0.200	-14.00	-21.00	0.087	-21.21	-44.50	0.038	-28.40	-68.00
-4.00	0.230	-12.77	-21.50	0.136	-17.33	-45.00	0.035	-29.12	-68.50
-4.25	0.268	-11.45	-22.00	0.184	-14.70	-45.50	0.027	-31.37	-69.00
-4.50	0.296	-10.57	-22.50	0.218	-13.23	-46.00	0.020	-33.98	-69.50
-4.75	0.306	-10.27	-23.00	0.231	-12.73	-46.50	0.014	-37.08	-70.00
-5.00	0.301	-10.43	-23.50	0.221	-13.11	-47.00	0.014	-37.08	-70.50
-5.25	0.276	-11.17	-24.00	0.191	-14.38	-47.50	0.013	-37.72	-71.00
-5.50	0.238	-12.47	-24.50	0.147	-16.65	-48.00	0.010	-40.00	-71.50
-5.75	0.188	-14.52	-25.00	0.099	-20.09	-48.50	0.002	-53.98	-72.00
-6.00	0.130	-17.72	-25.50	0.056	-25.04	-49.00	0.010	-40.00	-72.50
-6.25	0.068	-23.35	-26.00	0.033	-29.63	-49.50	0.025	-32.04	-73.00
-6.50	0.016	-35.92	-26.50	0.036	-28.87	-50.00	0.041	-27.74	-73.50

Preliminary, subject to final design and review.