

ENGINEERING STATEMENT RE
APPLICATION TO MODIFY CONSTRUCTION PERMIT
FOR AUXILIARY DTV FACILITY
KSCI-DT, LONG BEACH, CALIFORNIA
CHANNEL 18 109.7 KW ERP (MAX DA) 797.5 METERS HAAT

NOVEMBER 2009

COHEN, DIPPELL AND EVERIST, P.C.
CONSULTING ENGINEERS
RADIO AND TELEVISION
WASHINGTON, D.C.

COHEN, DIPPELL AND EVERIST, P. C.


City of Washington)
) ss
District of Columbia)

Ross J. Heide, being duly sworn upon his oath, deposes and states that:

He is a graduate of the Massachusetts Institute of Technology in Operations Research and Management Science, a Registered Professional Engineer in the District of Columbia, and employed by Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

That the attached engineering report was prepared by him or under his supervision and direction and


That the facts stated herein are true of his own knowledge, except such facts as are stated to be on information and belief, and as to such facts he believes them to be true.



Ross J. Heide
District of Columbia
Professional Engineer
Registration No. PE900748

Subscribed and sworn to before me this 17th day of November, 2009.





Notary Public

My Commission Expires: 2/28/2013

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MODIFY AUXILIARY OPERATION

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Introduction

This engineering statement has been prepared on behalf of KSLS, Inc., ("KSCI"), licensee of KSCI-DT, Channel 18, Long Beach, California, and accompanies the request to modify its construction permit for auxiliary DTV facility (FCC File No. BXPCDT-20090921ABQ). The modification requested herein specifies a lower ERP resulting from a change in the transmission line length and type. Also, the direction of the mechanical tilt has been adjusted to better fit the contour of the main facility. This auxiliary facility is necessary for the continuous operation of KSCI during the construction of the station's permanent post-transition digital facility. See File No. BMPCDT-20080619ACW.

Tower Information

The DTV auxiliary antenna will be side-mounted with a center of radiation at 103.6 meters (340 feet) above ground level on an existing tower which has a total overall structure height above ground of 166 meters (544.6 feet). The transmitter site is located between the eastern ends of Audio Rd. and Video Rd., Mt. Wilson, California. The tower registration number of the existing tower is 1026532. Exhibit E-1 is a diagram of the existing tower. The proposed auxiliary transmitter site is approximately 1.4 km north-northwest of KSCI's main transmitting site.

The geographic coordinates of the auxiliary site are as follows:

North Latitude: 34° 13' 32.0"

West Longitude: 118° 03' 51.8"

NAD-27

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Antenna Data

Antenna Type	ERI, Type AL12M-18-PM (or equivalent) end-fed with 2.0° electrical beam tilt and 1.5° mechanical tilt toward N 290° E, true; manufacturer antenna data attached as Exhibit E-2.
Transmission Line	ERI, HJ11-50, 4", 50 ohm Helix coaxial cable, 104.2 meters (342 feet); Line Loss for Ch 18 is 0.285 dB/100 feet.

Power Data

Transmitter Output Power	4.50 kW	6.53 dBk
Transmission Line Efficiency/Loss	80.0%	0.969 dB
Antenna Input Power	3.60 kW	5.56 dBk
Antenna Gain (Max)	30.48	14.84 dB
Effective Radiated Power	109.7 kW	20.40 dBk

Elevation Data

Vertical dimension of Channel 18 auxiliary side-mounted antenna	9.39 meters 30.8 feet
Overall height above ground of the existing antenna structure (including beacon and lightning protection)	166.0 meters 544.6 feet
Center of radiation of Channel 18 auxiliary antenna above ground	103.6 meters 340 feet
Elevation of site above mean sea level	1731.0 meters 5679.1 feet
Center of radiation of Channel 18 auxiliary antenna above mean sea level	1834.6 meters 6019.0 feet

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Overall height above mean sea level of existing tower (including beacon)	1897.0 meters 6223.7 feet
Antenna height above average terrain	797.5 meters 2616.5 feet

Allocation

An allocation spacing study from the proposed site has not been performed as the predicted noise-limited contour of the proposed KSCI-DT auxiliary DTV operation is within the contour of KSCI's authorized main facility (FCC File No. BMPCDT-20080619ACW), except for a very small arc over the Pacific Ocean. The area where the auxiliary predicted contour exceeds that of the main facility is more than 60 km south-southwest of the mainland and is entirely over water. The area in question is shown on the map E-3. This de minimis extension will not cause interference with any other broadcast facility and will not materially implicate the Commission's policy that requires an auxiliary facility's contour to remain within that of the main facility (see, e. g., Section 73.1675(a)(1)(iii), applying to analog broadcasting).

Coverage

The average elevation data for 3.2 to 16.1 km along each radial has been determined from the NGDC 3-second computerized terrain database. The F(50,90) DTV coverage contours have been computed from reference to the propagation data for Channels 14-69, as published by the FCC in Figure 10b and Figure 10c, Section 73.699 of the FCC Rules and Regulations.

Table I includes the distances to the F(50,90) 41 dBu coverage contour, the average elevation 3.2 to 16.1 km, and the antenna height above average terrain for 36 radials spaced 10 degrees in

azimuth. Exhibit E-3 provides a map of the computed coverage contours for the proposed auxiliary DTV operation relative to the F(50,90) 41 dBu contour of the authorized KSCI-DT construction permit.

Other Licensed and Broadcast Facilities

There are no AM facilities within 3.22 km of the proposed site. KNBC-DT, Channel 36 and KOST(FM), 103.5 MHz, both licensed to Los Angeles, California, transmit from the same tower. No adverse technical effect is anticipated by the proposed DTV auxiliary operation to any other FCC authorized facility.

FCC Rule, Section 1.1307

The proposed operation based upon the current OET Bulletin No. 65, Edition No. 97-01, dated August 1997 and Supplement A meets the provisions of the FCC radio frequency field ("RFF") guidelines, and thus, complies with Section 1.1307 of the FCC Rules. Provisions will be made to reduce power or to terminate the transmitter emissions, as appropriate, when it is necessary for authorized personnel to be on the tower.

The following equations from OET Bulletin No. 65 have been used to calculate the predicted radiofrequency fields at 2 meters above ground at the base of the tower:

Digital Television Broadcast Stations

$$S = [(33.4)(F^2)(ERP^2)]/R^2$$

S = Power Density in Microwatts/sq. cm ($\mu\text{W}/\text{cm}^2$)

F = Relative Field Factor in the downward direction of interest (-60° to -90° elevation)

ERP_V = Total Peak Visual ERP in Watts

ERP_A = Total Aural ERP in Watts

ERP = Power in Watts

R = Distance from 2 meters above ground to center of radiation in meters

For the DTV auxiliary operation, KSCI-DT proposes to use an ERI, Type AL12M-18-PM or equivalent antenna as described above. The manufacturer's elevation pattern for this antenna indicates a maximum relative downward field of less than 0.1 towards the ground in the vicinity of the tower. Using this relative field factor and the procedures prescribed in OET Bulletin 65, the maximum RFF resulting from the proposed auxiliary operation is less than $3.6 \mu\text{W}/\text{cm}^2$. This is less than 1.1% of the $329.3 \mu\text{W}/\text{cm}^2$ maximum human exposure to RFF recommended by the current FCC guidelines for the general population.

Although the individual contribution of KSCI's proposed auxiliary operation will be well below 5% of the MPE limit, the applicant proposes to confirm RFF safety post-construction by on-site measurements in cooperation with the other stations operating on the tower.

Authorized personnel and rigging contractors will be alerted to the potential zone of high field levels on the tower, and if necessary, the station will operate with reduced power or terminate the operation of the transmitter as appropriate when it is necessary for authorized personnel or contractors to perform work on the tower. Workers and the general public, therefore, will not be subjected to RFF levels in excess of the current FCC guidelines.

An environmental assessment ("EA") is categorically excluded under Section 1.1306 of the FCC Rules and Regulations as the tower was constructed prior to the requirements specified in WT Docket No. 03-128 and the permittee indicates:

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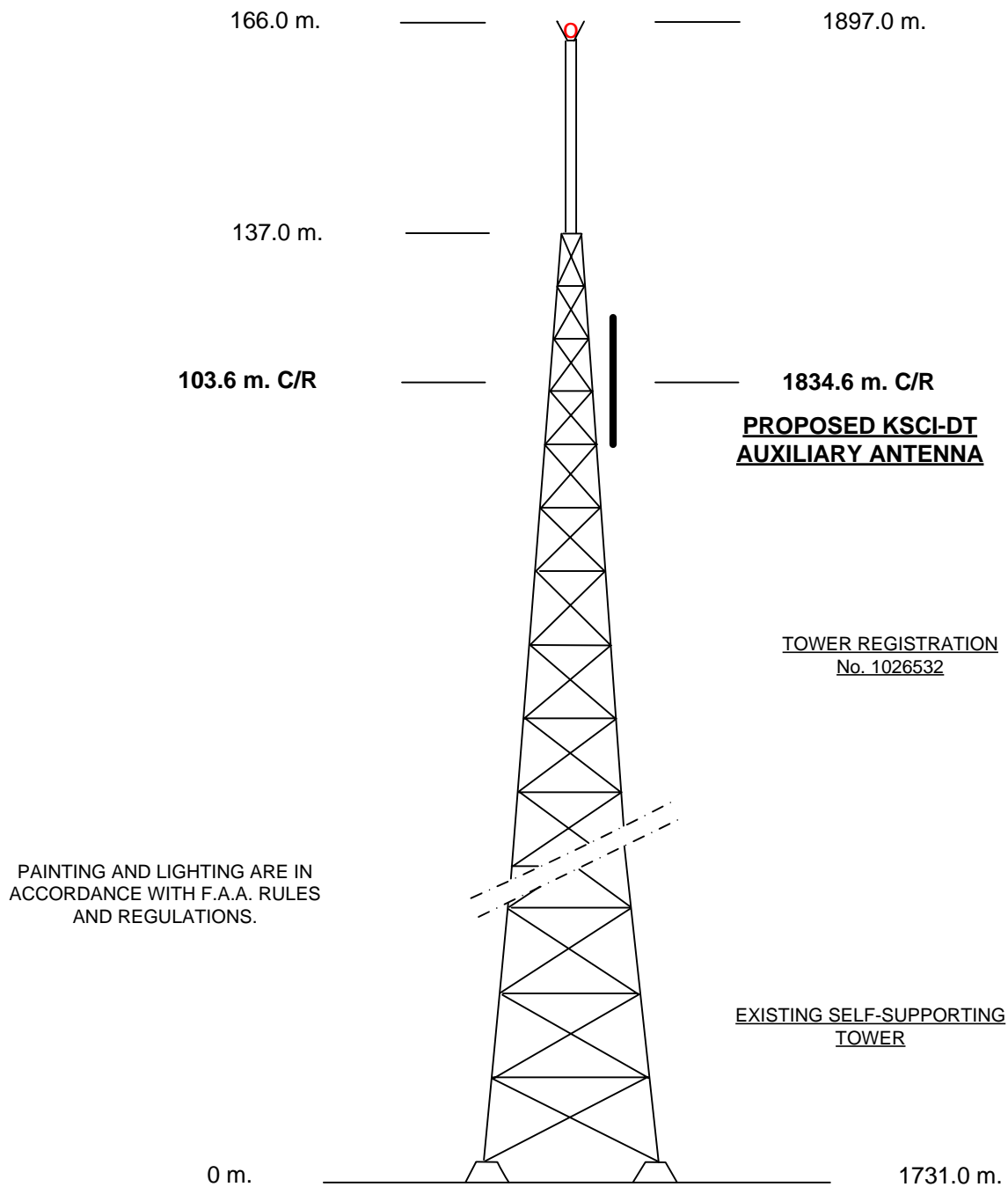
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- (a)(1) The proposed facilities on an existing communications site are not located in an officially designated wilderness area.
- (a)(2) The proposed facilities on an existing communications site are not located in an officially designated wildlife preserve.
- (a)(3) The proposed facilities will not affect any listed threatened or endangered species or habitats.
- (a)(3)(ii) The proposed facilities will not jeopardize the continued existence of any proposed endangered or threatened species or likely to result in the destruction or adverse modification of proposed critical habitats.
- (a)(4) The proposed facilities located on a tower which was built prior to the adoption of WT Docket No. 03-128 and is grandfathered and has not affected any known districts, sites, buildings, structures, or objects significant in American history, architecture, archaeology, engineering, or culture.
- (a)(5) The proposed facilities are not located near any known Indian religious sites.
- (a)(6) The proposed facilities are not located in a flood plain.
- (a)(7) The installation of the DTV facilities on an existing tower at an existing site will not involve a significant change in surface features of the ground in the vicinity of the tower.
- (a)(8) No lighting changes are proposed unless required by the FAA.
- (b) Workers and the general public will not be subjected to RFF levels in excess of the current FCC guidelines contained in OET Bulletin 65 (Edition 97-01) and Supplement A. Authorized personnel will be alerted to areas of the antennas where potential radiation levels are in excess of the FCC guidelines. A security fence with a locked gate precludes access to the tower site.

ABOVE GROUND

ABOVE MEAN SEA LEVEL



NOT TO SCALE

EXHIBIT E - 1
VERTICAL SKETCH
FOR THE PROPOSED AUXILIARY DTV FACILITY OF
KSCI-DT, CH 18, LONG BEACH, CALIFORNIA
NOVEMBER 2009

COHEN, DIPPELL and EVERIST, P.C. Consulting Engineers

COHEN, DIPPELL AND EVERIST, P.C.

EXHIBIT E-2

ANTENNA MANUFACTURER DATA

KSCI-DT, AUXILIARY, CHANNEL 18, LONG BEACH, CALIFORNIA

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EXHIBIT E-2

ANTENNA MANUFACTURER DATA

KSCI-DT, AUXILIARY, CHANNEL 18, LONG BEACH, CALIFORNIA

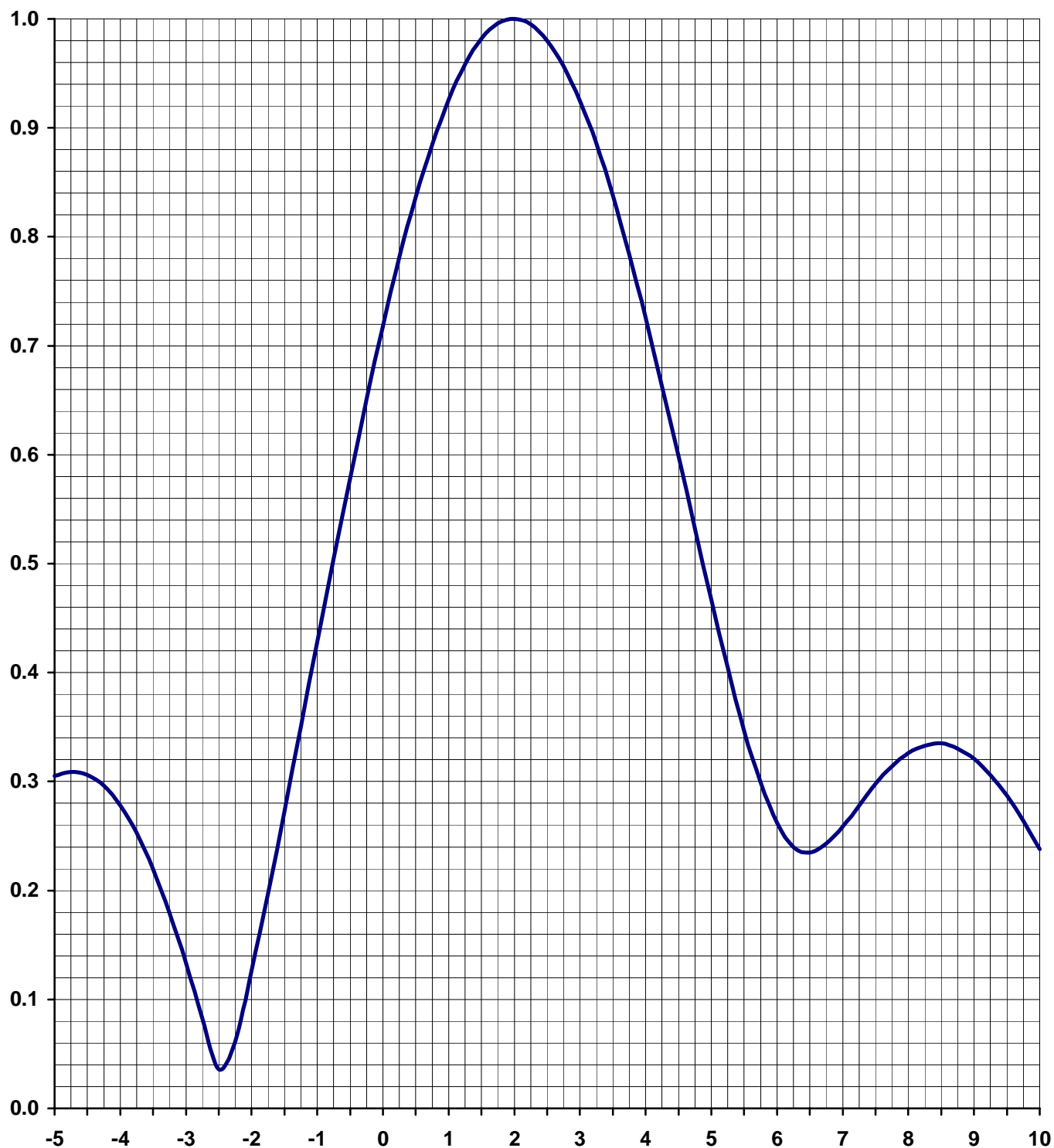
ELEVATION PATTERN

TYPE: AL12Plus8H

Directivity:	Numeric	dBd
Main Lobe:	<u>12.00</u>	<u>10.79</u>
Horizontal:	<u>6.19</u>	<u>7.91</u>

Frequency: 18 (DTV)

Location:	<u>Long Beach</u>
Beam Tilt:	<u>2.00</u>
Polarization:	<u>Horizontal</u>



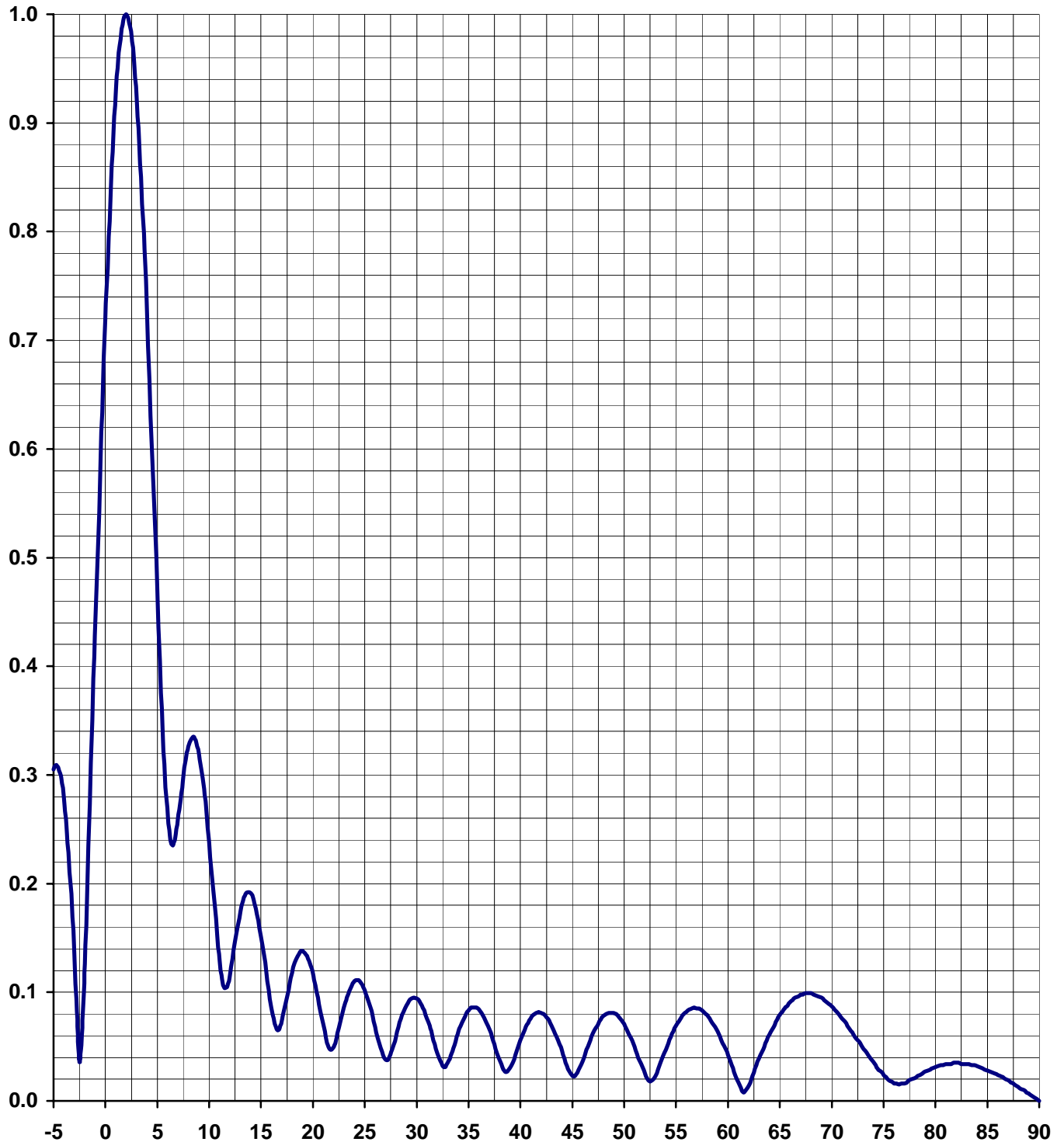
ELEVATION PATTERN

TYPE: AL12Plus8H

Directivity:	Numeric	dBd
Main Lobe:	<u>12.00</u>	<u>10.79</u>
Horizontal:	<u>6.19</u>	<u>7.91</u>

Frequency: 18 (DTV)

Location:	<u>Long Beach</u>
Beam Tilt:	<u>2.00</u>
Polarization:	<u>Horizontal</u>



TABULATED DATA FOR ELEVATION PATTERN

TYPE: AL12Plus8H

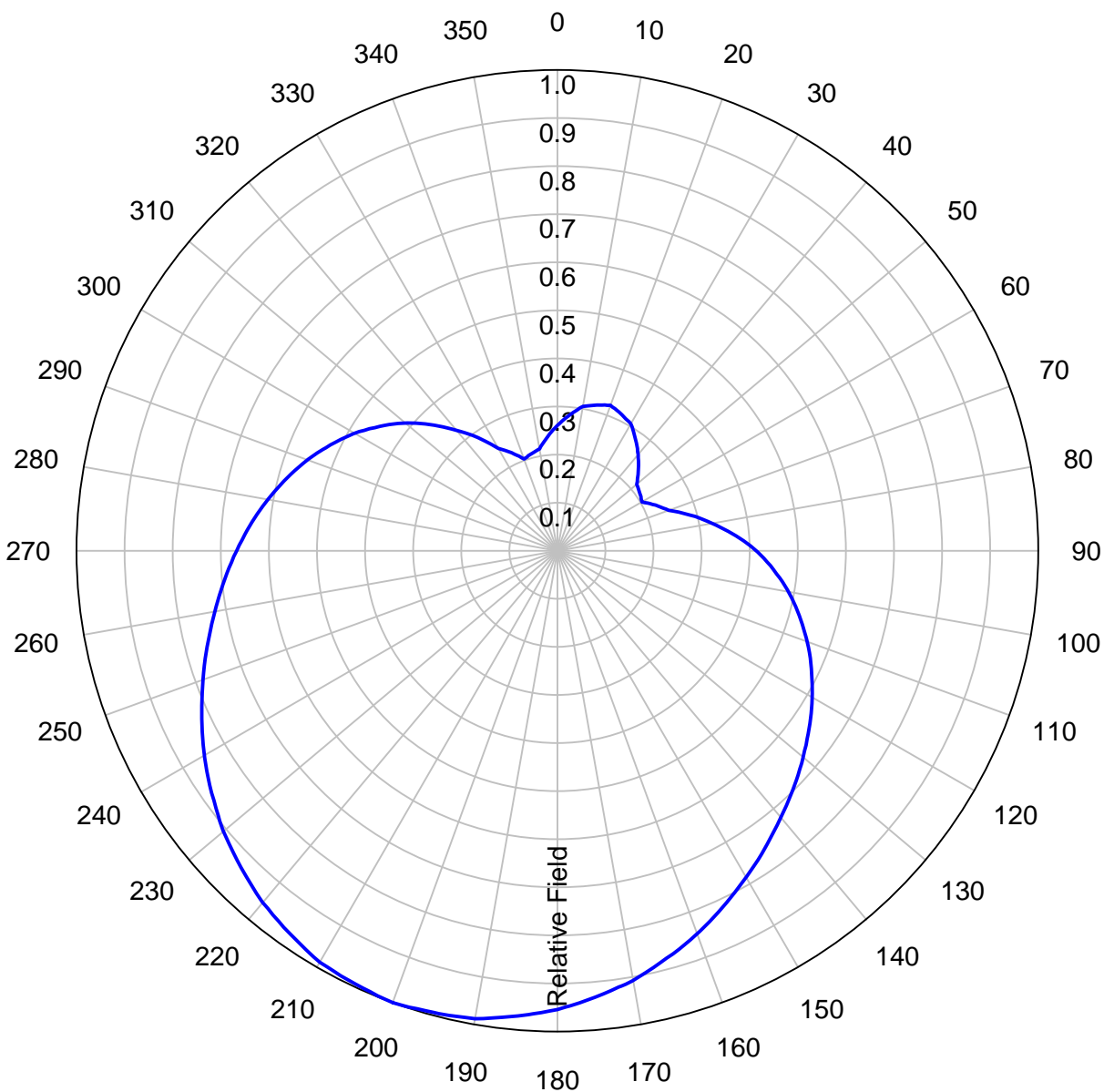
-5 to 10 degrees in 0.25 increments

10 to 90 degrees in 0.50 increments

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
-5.00	0.305	-10.31	6.75	0.243	-12.29	27.00	0.038	-28.40	50.50	0.061	-24.29	74.00	0.036	-28.87
-4.75	0.309	-10.20	7.00	0.259	-11.73	27.50	0.043	-27.33	51.00	0.050	-26.02	74.50	0.029	-30.75
-4.50	0.306	-10.29	7.25	0.278	-11.12	28.00	0.059	-24.58	51.50	0.037	-28.64	75.00	0.024	-32.40
-4.25	0.296	-10.57	7.50	0.298	-10.52	28.50	0.076	-22.38	52.00	0.025	-32.04	75.50	0.019	-34.42
-4.00	0.278	-11.12	7.75	0.314	-10.06	29.00	0.088	-21.11	52.50	0.018	-34.89	76.00	0.016	-35.92
-3.75	0.253	-11.94	8.00	0.326	-9.74	29.50	0.094	-20.54	53.00	0.023	-32.77	76.50	0.015	-36.48
-3.50	0.220	-13.15	8.25	0.333	-9.55	30.00	0.094	-20.54	53.50	0.035	-29.12	77.00	0.016	-35.92
-3.25	0.180	-14.89	8.50	0.335	-9.50	30.50	0.088	-21.11	54.00	0.047	-26.56	77.50	0.019	-34.42
-3.00	0.133	-17.52	8.75	0.330	-9.63	31.00	0.076	-22.38	54.50	0.059	-24.58	78.00	0.021	-33.56
-2.75	0.082	-21.72	9.00	0.321	-9.87	31.50	0.060	-24.44	55.00	0.069	-23.22	78.50	0.024	-32.40
-2.50	0.036	-28.87	9.25	0.306	-10.29	32.00	0.044	-27.13	55.50	0.077	-22.27	79.00	0.027	-31.37
-2.25	0.061	-24.29	9.50	0.287	-10.84	32.50	0.032	-29.90	56.00	0.082	-21.72	79.50	0.029	-30.75
-2.00	0.126	-17.99	9.75	0.264	-11.57	33.00	0.035	-29.12	56.50	0.085	-21.41	80.00	0.031	-30.17
-1.75	0.198	-14.07	10.00	0.238	-12.47	33.50	0.048	-26.38	57.00	0.085	-21.41	80.50	0.033	-29.63
-1.50	0.273	-11.28	10.50	0.182	-14.80	34.00	0.063	-24.01	57.50	0.083	-21.62	81.00	0.034	-29.37
-1.25	0.350	-9.12	11.00	0.130	-17.72	34.50	0.075	-22.50	58.00	0.079	-22.05	81.50	0.034	-29.37
-1.00	0.428	-7.37	11.50	0.104	-19.66	35.00	0.083	-21.62	58.50	0.072	-22.85	82.00	0.035	-29.12
-0.75	0.504	-5.95	12.00	0.116	-18.71	35.50	0.086	-21.31	59.00	0.064	-23.88	82.50	0.034	-29.37
-0.50	0.579	-4.75	12.50	0.147	-16.65	36.00	0.084	-21.51	59.50	0.053	-25.51	83.00	0.034	-29.37
-0.25	0.651	-3.73	13.00	0.174	-15.19	36.50	0.077	-22.27	60.00	0.042	-27.54	83.50	0.033	-29.63
0.00	0.718	-2.88	13.50	0.190	-14.42	37.00	0.066	-23.61	60.50	0.030	-30.46	84.00	0.032	-29.90
0.25	0.781	-2.15	14.00	0.191	-14.38	37.50	0.052	-25.68	61.00	0.017	-35.39	84.50	0.030	-30.46
0.50	0.836	-1.56	14.50	0.177	-15.04	38.00	0.037	-28.64	61.50	0.008	-41.94	85.00	0.028	-31.06
0.75	0.885	-1.06	15.00	0.152	-16.36	38.50	0.027	-31.37	62.00	0.014	-37.08	85.50	0.026	-31.70
1.00	0.926	-0.67	15.50	0.119	-18.49	39.00	0.030	-30.46	62.50	0.026	-31.70	86.00	0.024	-32.40
1.25	0.958	-0.37	16.00	0.086	-21.31	39.50	0.042	-27.54	63.00	0.039	-28.18	86.50	0.022	-33.15
1.50	0.982	-0.16	16.50	0.066	-23.61	40.00	0.056	-25.04	63.50	0.050	-26.02	87.00	0.019	-34.42
1.75	0.996	-0.03	17.00	0.073	-22.73	40.50	0.068	-23.35	64.00	0.061	-24.29	87.50	0.016	-35.92
2.00	1.000	0.00	17.50	0.096	-20.35	41.00	0.076	-22.38	64.50	0.070	-23.10	88.00	0.013	-37.72
2.25	0.995	-0.04	18.00	0.118	-18.56	41.50	0.081	-21.83	65.00	0.079	-22.05	88.50	0.010	-40.00
2.50	0.980	-0.18	18.50	0.133	-17.52	42.00	0.081	-21.83	65.50	0.086	-21.31	89.00	0.007	-43.10
2.75	0.957	-0.38	19.00	0.138	-17.20	42.50	0.077	-22.27	66.00	0.091	-20.82	89.50	0.006	-44.44
3.00	0.925	-0.68	19.50	0.132	-17.59	43.00	0.069	-23.22	66.50	0.095	-20.45	90.00	0.003	-50.46
3.25	0.885	-1.06	20.00	0.117	-18.64	43.50	0.059	-24.58	67.00	0.098	-20.18			
3.50	0.838	-1.54	20.50	0.095	-20.45	44.00	0.046	-26.74	67.50	0.099	-20.09			
3.75	0.784	-2.11	21.00	0.070	-23.10	44.50	0.032	-29.90	68.00	0.099	-20.09			
4.00	0.726	-2.78	21.50	0.050	-26.02	45.00	0.023	-32.77	68.50	0.097	-20.26			
4.25	0.663	-3.57	22.00	0.050	-26.02	45.50	0.026	-31.70	69.00	0.095	-20.45			
4.50	0.598	-4.47	22.50	0.067	-23.48	46.00	0.037	-28.64	69.50	0.091	-20.82			
4.75	0.532	-5.48	23.00	0.086	-21.31	46.50	0.050	-26.02	70.00	0.087	-21.21			
5.00	0.467	-6.61	23.50	0.101	-19.91	47.00	0.062	-24.15	70.50	0.082	-21.72			
5.25	0.405	-7.85	24.00	0.110	-19.17	47.50	0.071	-22.97	71.00	0.076	-22.38			
5.50	0.347	-9.19	24.50	0.110	-19.17	48.00	0.078	-22.16	71.50	0.069	-23.22			
5.75	0.299	-10.49	25.00	0.102	-19.83	48.50	0.081	-21.83	72.00	0.063	-24.01			
6.00	0.262	-11.63	25.50	0.087	-21.21	49.00	0.081	-21.83	72.50	0.056	-25.04			
6.25	0.240	-12.40	26.00	0.068	-23.35	49.50	0.077	-22.27	73.00	0.049	-26.20			
6.50	0.235	-12.58	26.50	0.049	-26.20	50.00	0.071	-22.97	73.50	0.042	-27.54			

AZIMUTH PATTERN**Type:**ALP-M**Channel:**18**Directivity:**NumericdBd**Location:**Long Beach, CA.**Peak(s) at:**2.544.05**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-M

PolarizationHorizontal

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
0	0.261	-11.67	92	0.429	-7.35	184	0.968	-0.28	276	0.634	-3.96
2	0.270	-11.37	94	0.444	-7.05	186	0.974	-0.23	278	0.623	-4.11
4	0.279	-11.09	96	0.458	-6.78	188	0.981	-0.17	280	0.612	-4.26
6	0.287	-10.84	98	0.473	-6.50	190	0.988	-0.10	282	0.600	-4.44
8	0.296	-10.57	100	0.488	-6.23	192	0.990	-0.09	284	0.588	-4.61
10	0.305	-10.31	102	0.501	-6.00	194	0.993	-0.06	286	0.577	-4.78
12	0.308	-10.23	104	0.514	-5.78	196	0.995	-0.04	288	0.565	-4.96
14	0.312	-10.12	106	0.527	-5.56	198	0.998	-0.02	290	0.553	-5.15
16	0.315	-10.03	108	0.540	-5.35	200	1.000	0.00	292	0.540	-5.35
18	0.319	-9.92	110	0.553	-5.15	202	0.998	-0.02	294	0.527	-5.56
20	0.322	-9.84	112	0.565	-4.96	204	0.995	-0.04	296	0.514	-5.78
22	0.319	-9.92	114	0.577	-4.78	206	0.993	-0.06	298	0.501	-6.00
24	0.315	-10.03	116	0.588	-4.61	208	0.990	-0.09	300	0.488	-6.23
26	0.312	-10.12	118	0.600	-4.44	210	0.988	-0.10	302	0.473	-6.50
28	0.308	-10.23	120	0.612	-4.26	212	0.981	-0.17	304	0.458	-6.78
30	0.305	-10.31	122	0.623	-4.11	214	0.974	-0.23	306	0.444	-7.05
32	0.296	-10.57	124	0.634	-3.96	216	0.968	-0.28	308	0.429	-7.35
34	0.287	-10.84	126	0.645	-3.81	218	0.961	-0.35	310	0.414	-7.66
36	0.279	-11.09	128	0.656	-3.66	220	0.954	-0.41	312	0.397	-8.02
38	0.270	-11.37	130	0.667	-3.52	222	0.945	-0.49	314	0.379	-8.43
40	0.261	-11.67	132	0.678	-3.38	224	0.935	-0.58	316	0.362	-8.83
42	0.252	-11.97	134	0.689	-3.24	226	0.926	-0.67	318	0.344	-9.27
44	0.243	-12.29	136	0.701	-3.09	228	0.916	-0.76	320	0.327	-9.71
46	0.233	-12.65	138	0.712	-2.95	230	0.907	-0.85	322	0.311	-10.14
48	0.224	-13.00	140	0.723	-2.82	232	0.895	-0.96	324	0.295	-10.60
50	0.215	-13.35	142	0.735	-2.67	234	0.883	-1.08	326	0.278	-11.12
52	0.213	-13.43	144	0.747	-2.53	236	0.872	-1.19	328	0.262	-11.63
54	0.210	-13.56	146	0.760	-2.38	238	0.860	-1.31	330	0.246	-12.18
56	0.208	-13.64	148	0.772	-2.25	240	0.848	-1.43	332	0.237	-12.51
58	0.205	-13.76	150	0.784	-2.11	242	0.835	-1.57	334	0.229	-12.80
60	0.203	-13.85	152	0.797	-1.97	244	0.822	-1.70	336	0.220	-13.15
62	0.212	-13.47	154	0.810	-1.83	246	0.810	-1.83	338	0.212	-13.47
64	0.220	-13.15	156	0.822	-1.70	248	0.797	-1.97	340	0.203	-13.85
66	0.229	-12.80	158	0.835	-1.57	250	0.784	-2.11	342	0.205	-13.76
68	0.237	-12.51	160	0.848	-1.43	252	0.772	-2.25	344	0.208	-13.64
70	0.246	-12.18	162	0.860	-1.31	254	0.760	-2.38	346	0.210	-13.56
72	0.262	-11.63	164	0.872	-1.19	256	0.747	-2.53	348	0.213	-13.43
74	0.278	-11.12	166	0.883	-1.08	258	0.735	-2.67	350	0.215	-13.35
76	0.295	-10.60	168	0.895	-0.96	260	0.723	-2.82	352	0.224	-13.00
78	0.311	-10.14	170	0.907	-0.85	262	0.712	-2.95	354	0.233	-12.65
80	0.327	-9.71	172	0.916	-0.76	264	0.701	-3.09	356	0.243	-12.29
82	0.344	-9.27	174	0.926	-0.67	266	0.689	-3.24	358	0.252	-11.97
84	0.362	-8.83	176	0.935	-0.58	268	0.678	-3.38	360	0.261	-11.67
86	0.379	-8.43	178	0.945	-0.49	270	0.667	-3.52			
88	0.397	-8.02	180	0.954	-0.41	272	0.656	-3.66			
90	0.414	-7.66	182	0.961	-0.35	274	0.645	-3.81			

Preliminary, subject to final design and review.

TABULATED DATA FOR AZIMUTH PATTERN FCC FILING FORMAT

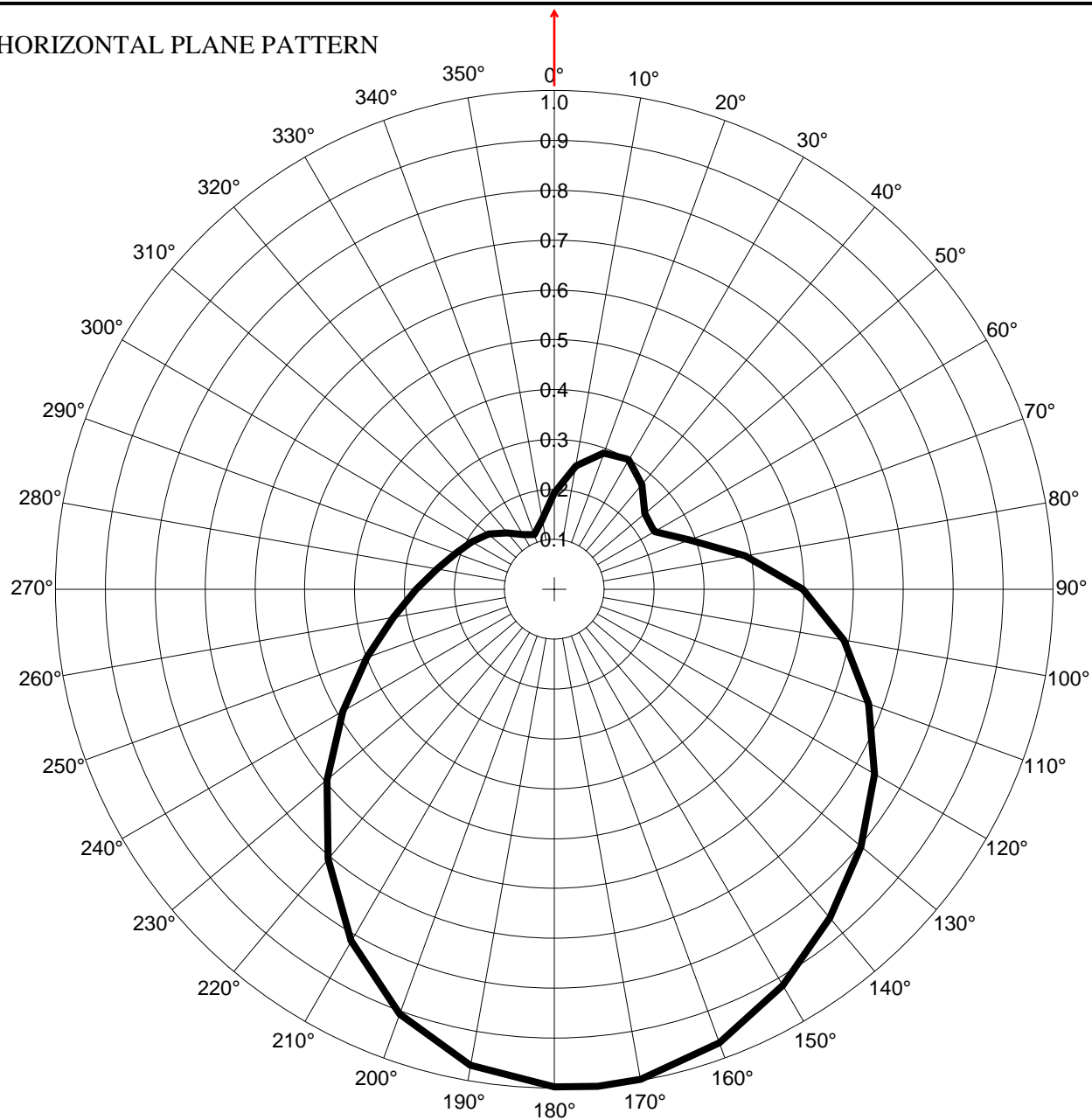
Type: ALP-M

PolarizationHorizontal

ANGLE	FIELD	ERP (kW)	ERP (dBk)
0	0.261	8.651	9.371
10	0.305	11.814	10.724
20	0.322	13.168	11.195
30	0.305	11.814	10.724
40	0.261	8.651	9.371
50	0.215	5.871	7.687
60	0.203	5.234	7.188
70	0.246	7.686	8.857
80	0.327	13.580	11.329
90	0.414	21.767	13.378
100	0.488	30.244	14.806
110	0.553	38.838	15.893
120	0.612	47.567	16.773
130	0.667	56.501	17.521
140	0.723	66.387	18.221
150	0.784	78.061	18.924
160	0.848	91.326	19.606
170	0.907	104.476	20.190
180	0.954	115.585	20.629
190	0.988	123.970	20.933
200	1.000	127.000	21.038
210	0.988	123.970	20.933
220	0.954	115.585	20.629
230	0.907	104.476	20.190
240	0.848	91.326	19.606
250	0.784	78.061	18.924
260	0.723	66.387	18.221
270	0.667	56.501	17.521
280	0.612	47.567	16.773
290	0.553	38.838	15.893
300	0.488	30.244	14.806
310	0.414	21.767	13.378
320	0.327	13.580	11.329
330	0.246	7.686	8.857
340	0.203	5.234	7.188
350	0.215	5.871	7.687

Preliminary, subject to final design and review.

HORIZONTAL PLANE PATTERN



Relative Intensity

Pattern file: KSCI 1097 290 MAX.PAT

TABLE I
DTV COVERAGE DATA
FOR PROPOSED OPERATION OF
KSCI-DT, LONG BEACH, CALIFORNIA
CHANNEL 18 109.7 KW ERP 797.5 METERS HAAT
NOVEMBER 2009

<u>Radial</u> <u>Bearing</u> N ° E, T	<u>Average*</u> <u>Elevation</u> <u>3 to 16.1 km</u> meters	<u>Effective</u> <u>Height</u> meters	<u>Depression</u> <u>Angle</u> degrees	<u>ERP At</u> <u>Radio</u> <u>Horizon</u> kW	<u>Distance to Contour F(50,90)</u> 41 dBu <u>Noise-Limited</u> km
0	1383.3	451.3	0.588	4.1	69.1
10	1353.0	481.6	0.608	6.9	73.7
20	1488.1	346.5	0.516	9.3	67.8
30	1521.4	313.2	0.490	9.8	66.2
40	1521.7	312.9	0.490	9.8	66.1
50	1445.9	388.7	0.546	8.2	69.8
60	1397.7	436.9	0.579	6.2	71.0
70	1172.4	662.2	0.713	5.9	78.8
80	1144.4	690.2	0.728	5.9	79.6
90	1004.5	830.1	0.798	9.1	86.7
100	826.7	1007.9	0.879	16.6	96.5
110	1181.6	653.0	0.708	27.2	91.1
120	1056.0	778.6	0.773	38.2	98.2
130	891.9	942.7	0.850	49.2	105.2
140	688.3	1146.3	0.938	60.2	112.4
150	468.8	1365.8	1.024	70.6	119.8
160	372.2	1462.4	1.059	81.1	124.3
170	327.3	1507.3	1.075	92.2	127.1
180	264.8	1569.8	1.097	102.8	130.0
190	291.8	1542.8	1.088	109.3	130.0
200	293.8	1540.8	1.087	109.7	130.0
210	298.2	1536.4	1.086	109.3	129.8
220	286.4	1548.2	1.090	103.0	129.5
230	300.0	1534.6	1.085	90.0	127.6
240	317.7	1516.9	1.079	72.7	124.7
250	343.6	1491.0	1.070	54.5	120.6
260	367.0	1467.6	1.061	38.8	116.2
270	488.2	1346.4	1.016	26.3	109.0
280	543.5	1291.1	0.995	17.6	103.8

COHEN, DIPPELL AND EVERIST, P.C.

TABLE I
DTV COVERAGE DATA
FOR PROPOSED OPERATION OF
KSCI-DT, LONG BEACH, CALIFORNIA
CHANNEL 18 109.7 KW ERP 797.5 METERS HAAT
NOVEMBER 2009

Radial	Average*	Effective	Depression	ERP At	Distance to Contour F(50,90)
<u>Bearing</u>	<u>Elevation</u>	<u>Height</u>	<u>Angle</u>	<u>Radio</u>	<u>41 dBu</u>
N ° E, T	<u>3 to 16.1 km</u>	<u>meters</u>	<u>degrees</u>	<u>Horizon</u>	<u>Noise-Limited</u>
	meters	meters		kW	km
290	630.4	1204.2	0.961	11.8	98.2
300	807.1	1027.5	0.888	8.4	90.9
310	1085.0	749.6	0.758	6.2	81.5
320	1042.4	792.2	0.780	4.9	80.6
330	1141.5	693.1	0.729	4.0	76.6
340	1266.2	568.4	0.660	3.2	71.5
350	1319.5	515.1	0.629	2.4	67.7

*Based on data from FCC 3-second data base.

DTV Channel 18 (494-500 MHz)
Average Elevation 3.2 to 16.1 km 1731 meters AMSL
Center of Radiation 1834.6 meters AMSL
Antenna Height Above Average Terrain 797.5 meters
Effective Radiated Power 109.7 kW (20.40 dBk) Max

North Latitude: 34° 13' 32"
West Longitude: 118° 03' 51.8"

(NAD-27)

COHEN, DIPPELL AND EVERIST, P.C. Consulting Engineers Washington, D.C.

KSCI-DT (AUX) 41 dBu
F(50,90) NOISE-LIMITED CONTOUR

KSCI-DT 41 dBu
F(50,90) NOISE-LIMITED CONTOUR
BMPCDT20080619ACW

KSCI-DT (AUX) SITE

KSCI-DT SITE

EXHIBIT E-3
COMPUTED 41 dBu CONTOUR
FROM THE PROPOSED AUXILIARY OPERATION OF
KSCI-DT, LONG BEACH, CALIFORNIA
CHANNEL 18 109.7 kW ERP MAX DA 797.5 METERS HAAT
IN RELATION TO THE MAIN FACILITY CONTOUR
NOVEMBER 2009

0 20 40 60
Kilometers

CREATED WITH MAPTITUDE® GIS FOR WINDOWS FROM CALIPER CORPORATION

SECTION III - D - DTV Engineering

Complete Questions 1-5, and provide all data and information for the proposed facility, as requested in Technical Specifications, Items 1-13.

Pre-Transition Certification Checklist: An application concerning a pre-transition channel must complete questions 1(a)-(c), and 2-5. A correct answer of "Yes" to all of the questions will ensure an expeditious grant of a construction permit application to modify pre-transition facilities. However, if the proposed facility is located within the Canadian or Mexican borders, coordination of the proposal under the appropriate treaties may be required prior to grant of the application. An answer of "No" will require additional evaluation of the applicable information in this form before a construction permit can be granted.

Post-Transition Expedited Processing. An application concerning a post-transition channel must complete questions 1(a), (d)-(e), and 2-5. A station applying for a construction permit to build its post-transition channel will receive expedited processing if its application (1) does not seek to expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"); (2) specifies facilities that match or closely approximate those defined in the new DTV Table Appendix B facilities; and (3) is filed on or before March 17, 2008 (45 days of the Report and Order in the Third DTV Periodic Review proceeding, MB Docket No. 07-91).

1. The proposed DTV facility complies with 47 C.F.R. Section 73.622 in the following respects:
 - (a) It will operate on the DTV channel for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
 - (b) It will operate a pre-transition facility from a transmitting antenna located within 5.0 km (3.1 miles) of the DTV reference site for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
 - (c) It will operate a pre-transition facility with an effective radiated power (ERP) and antenna height above average terrain (HAAT) that do not exceed the DTV reference ERP and HAAT for this station as established in 47 C.F.R. Section 73.622. ☐ Yes ☐ No
 - (d) It will operate at post-transition facilities that do not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report and Order in MB Docket No. 87-268 establishing the new DTV Table of Allotments in 47 C.F.R. § 73.622(i) ("new DTV Table Appendix B"). ☐ Yes ☐ No
☐ N/A
 - (e) It will operate at post-transition facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the new DTV Table Appendix B. ☐ Yes ☐ No
☐ N/A
2. The proposed facility will not have a significant environmental impact, including exposure of workers or the general public to levels of RIF radiation exceeding the applicable health and safety guidelines, and therefore will not come within 47 C.F.R. Section 1.1307. ☐ Yes ☐ No

Applicant must **submit the Exhibit** called for in Item 13.

3. Pursuant to 47 C.F.R. Section 73.625, the DTV coverage contour of the proposed facility will encompass the allotted principal community. ☐ Yes ☐ No
4. The requirements of 47 C.F.R. Section 73.1030 regarding notification to radio astronomy installations, radio receiving installations and FCC monitoring stations have either been satisfied or are not applicable. ☐ Yes ☐ No
5. The antenna structure to be used by this facility has been registered by the Commission and will not require reregistration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely effect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7. ☐ Yes ☐ No

SECTION III - D DTV Engineering

TECHNICAL SPECIFICATIONS Ensure that the specifications below are accurate. Contradicting data found elsewhere in this application will be disregarded. All items must be completed. The response "on file" is not acceptable.

TECH BOX

1. Channel Number: DTV _____ Analog TV, if any _____
2. Zone: ☐ I ☐ II ☐ III
3. Antenna Location Coordinates: (NAD 27)
- _____ ° _____ ' _____ " ☐ N ☐ S Latitude
_____ ° _____ ' _____ " ☐ E ☐ W Longitude
4. Antenna Structure Registration Number: _____
- ☐ Not applicable ☐ FAA Notification Filed with FAA
5. Antenna Location Site Elevation Above Mean Sea Level: _____ meters
6. Overall Tower Height Above Ground Level: _____ meters
7. Height of Radiation Center Above Ground Level: _____ meters
8. Height of Radiation Center Above Average Terrain: _____ meters
9. Maximum Effective Radiated Power (average power): _____ kW
10. Antenna Specifications:
- a.

Manufacturer	Model
--------------	-------
- b. Electrical Beam Tilt: _____ degrees ☐ Not Applicable
- c. Mechanical Beam Tilt: _____ degrees toward azimuth _____ degrees True ☐ Not Applicable
- Attach as an Exhibit all data specified in 47 C.F.R. Section 73.625(c). Exhibit No.
- d. Polarization: ☐ Horizontal ☐ Circular ☐ Elliptical

TECH BOX

e. Directional Antenna Relative Field Values:

☐

Not applicable (Nondirectional)

Rotation: _____

☐

No rotation

Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value	Degree	Value
0		60		120		180		240		300	
10		70		130		190		250		310	
20		80		140		200		260		320	
30		90		150		210		270		330	
40		100		160		220		280		340	
50		110		170		230		290		350	
Additional Azimuths											

If a directional antenna is proposed, the requirements of 47 C.F.R. Section 73.625(c) must be satisfied. **Exhibit required.**

Exhibit No.

11. Does the proposed facility satisfy the pre-transition interference protection provisions of 47 C.F.R. Section 73.623(a) (Applicable only if **Certification Checklist** Items 1(a), (b), or (c) are answered "No.") and/or the post-transition interference protection provisions of 47 C.F.R. Section 73.616?

☐

Yes

☐

No

If "No," attach as an Exhibit justification therefore, including a summary of any related previously granted waivers.

Exhibit No.

12. If the proposed facility will not satisfy the coverage requirement of 47 C.F.R. Section 73.625, attach as an Exhibit justification therefore. (Applicable only if **Certification Checklist** Item 3 is answered "No.")

Exhibit No.

13. **Environmental Protection Act. Submit in an Exhibit** the following:

Exhibit No.

- a. If **Certification Checklist Item 2** is answered "Yes," a brief explanation of why an Environmental Assessment is not required. Also describe in the Exhibit the steps that will be taken to limit RF radiation exposure to the public and to persons authorized access to the tower site.

By checking "Yes" to **Certification Checklist Item 2**, the applicant also certifies that it, in coordination with other users of the site, will reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radio frequency electromagnetic exposure in excess of FCC guidelines.

If **Certification Checklist Item 2** is answered "No," an Environmental Assessment as required by 47 C.F.R. Section 1.1311.

10. **Auction Authorization.** If the application is being submitted to obtain a construction permit for which the applicant was the winning bidder in an auction, then the applicant certifies, pursuant to 47 C.F.R. Section 73.5005(a), that it has attached an exhibit containing the information required by 47 C.F.R. Sections 1.2107(d), 1.2110(i), 1.2112(a) and 1.2112(b), if applicable.

☐ Yes ☐ No ☐ N/A

An exhibit is required unless this question is inapplicable.

Exhibit No.

11. **Anti-Drug Abuse Act Certification.** Applicant certifies that neither applicant nor any party to the application is subject to denial of federal benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862.

☐ Yes ☐ No

12. **Equal Employment Opportunity (EEO).** If the applicant proposes to employ five or more full-time employees, applicant certifies that it is filing simultaneously with this application a Model EEO Program Report on FCC Form 396-A.

☐ Yes ☐ No ☐ N/A

13. **Petition for Rulemaking/Counterproposal to Add New FM Channel to FM Table of Allotments.** If the application is being submitted concurrently with a Petition for Rulemaking or Counterproposal to Amend the FM Table of Allotments (47 C.F.R. Section 73.202) to add a new FM channel allotment, petitioner/counter-proponent certifies that, if the FM channel allotment requested is allotted, petitioner/counter-proponent will apply to participate in the auction of the channel allotment requested and specified in this application.

☐ Yes ☐ No ☐ N/A

I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in 'good faith. I acknowledge that all certifications and attached Exhibits are considered material representations. I hereby waive any claim to the use of any particular frequency as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and request an authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended.)

Typed or Printed Name of Person Signing	Typed or Printed Title of Person Signing
Signature	Date

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).

SECTION III PREPARER'S CERTIFICATION

I certify that I have prepared Section III (Engineering Data) on behalf of the applicant, and that after such preparation, I have examined and found it to be accurate and true to the best of my knowledge and belief.

Name	Relationship to Applicant (e.g., Consulting Engineer)	
Signature	Date	
Mailing Address		
City	State or Country (if foreign address)	ZIP Code
Telephone Number (include area code)	E-Mail Address (if available)	

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION PERMIT (U.S. CODE, TITLE 47, SECTION 312(a)(1)), AND/OR FORFEITURE (U.S. CODE, TITLE 47, SECTION 503).