

ENGINEERING STATEMENT  
RE DTV BROADCAST ENGINEERING DATA  
APPLICATION FOR CONSTRUCTION PERMIT  
ON BEHALF OF  
NVT HAWAII LICENSEE, LLC  
**KAI-DT, WAILUKU, HAWAII**  
CHANNEL 7 3.69 KW DA ERP 753 METERS

MARCH 2008

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                )

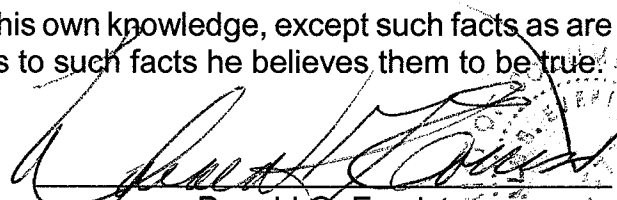
Donald G. Everist, being duly sworn upon his oath, deposes and states that:

He is a graduate electrical engineer, a Registered Professional Engineer in the District of Columbia, and is President, Secretary and Treasurer of Cohen, Dippell and Everist, P.C., Consulting Engineers, Radio - Television, with offices at 1300 L Street, N.W., Suite 1100, Washington, D.C. 20005;

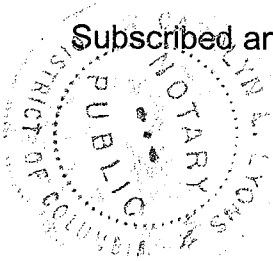
That his qualifications are a matter of record in the Federal Communications Commission;


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.

  
Donald G. Everist  
District of Columbia  
Professional Engineer  
Registration No. 5714

Subscribed and sworn to before me this 17<sup>th</sup> day of March, 2008.



  
Notary Public

My Commission Expires: 2/28/2013

### Introduction

This engineering statement has been prepared on behalf of NVT Hawaii Licensee, LLC, (“NVT”), licensee of KAIH-TV, Wailuku, Hawaii, in support of its request to construct DTV facilities for post-transition operation.

KAIH-TV is licensed to operate on NTSC television Channel 7 with a maximum visual ERP of 29.5 kW and an antenna height above average terrain (“HAAT”) of 1811 meters (5941.6 feet). In Appendix B of the revised DTV Table of Allotments<sup>1</sup>, NVT has been allocated a post-transition DTV operation of 3.69 kW directional ERP and HAAT of 1809 meters. KAIH-TV is a satellite station of KHON-TV, Honolulu, Hawaii and will “flash-cut” to digital operation on channel 7 for post-transition operation.

The licensed operation of KAIH-TV is located on an antenna farm atop the Haleakala summit. The KAIH-TV facilities, along with the other broadcast facilities located at the Haleakala Summit<sup>2</sup>, are being forced to relocate their operation due to possible radio signal interference to observatories maintained by the University of Hawaii Institute for Astronomy and the US Air Force Research Laboratory, which also occupy the Haleakala summit. The observatories on Haleakala Summit are involved in satellite tracking, searching for potentially hazardous asteroids and investigating the sun.

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<sup>1</sup>“In the Matter of Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service”, MM Docket 87-268, Memorandum Opinion and Order on Reconsideration of the Seventh Report and Order and Eighth Report and Order (FCC 08-72) Released March 6, 2008.

<sup>2</sup>Other broadcast facilities currently occupying the antenna farm at the Haleakala Summit are: KMAU(TV), KMEB(TV) and KOGG(TV)

KAIH-TV, along with the other affected broadcasters located at the Haleakala Summit, have jointly coordinated to identify a new site and develop a shared tower for the relocation of the existing broadcast facilities. NVT proposes to construct post-transition KAIH-DT facilities of 3.69 kW directional ERP at 753 meters HAAT approximately 12.4 km from the Appendic B Allotment site to a new tower located at the Ulupalakua Ranch site.

#### Proposed Parameters

There are no AM stations located within 3.22 km of the proposed tower site. There are three proposed post-transition DTV television stations, in addition to the KAIH-DT facilities, located within 1km of the proposed transmitting site.

The proposed shared High Band VHF antenna will be top-mounted on the new tower located at Ulupalakua Ranch. The new tower will have an overall structure height above ground of 60.7 meters (199.1 feet). Exhibit E-1 shows a vertical sketch and the arrangement of the top-mounted antenna on the tower. Registration is not required since the overall tower height above ground is less than 200 feet and there are no airports within 8 kilometers (5 miles).

The geographic coordinates of the proposed site are as follows:

North Latitude: 20° 39' 37"

West Longitude: 156° 21' 46"

NAD-27

#### Equipment Data

Antenna: Dielectric, THA-P2SP-4H/8H-1-B or equivalent horizontally polarized antenna with 1.7° electrical beam tilt. The antenna data as supplied by the manufacturer is included as Exhibit E-2

Transmission Line: 94.5 meters (310 feet) of Dielectric Rigid, Type FL-77, 3-1/8",  
50 ohm or equivalent, Attenuation 0.165 dB/100 ft

Power Data

Transmitter output	0.462 kW	-3.35 dBk
Combiner Attenuation	94.5%	0.25 dB
Transmission line efficiency/loss	89.0%	0.51 dB
Input power to the antenna	0.388 kW	-4.11 dBk
Antenna power gain, Main lobe	9.5	9.78 dB
Effective Radiated Power	3.69 kW	5.67 dBk

Elevation Data

Vertical dimension of side-mounted Channel 7 antenna including appurtenances	6.2 meters 20.4 feet
Overall height above ground of new antenna structure (including appurtenances)	60.7 meters 199.1 feet
Center of radiation of Channel 7 antenna above ground	49 meters 160.8 feet
Elevation of site above mean sea level	1361.3 meters 4466.2 feet
Center of radiation of Channel 7 antenna above mean sea level	1410.3 meters 4627.0 feet
Overall height above mean sea level of new tower (including beacon)	1422.0 meters 4665.4 feet
Antenna height above average terrain	753 meters

Note: Slight height differences may result due to conversion to metric.

### Coverage

The proposed KAIH-DT post-transition facilities will not expand the noise-limited service contour beyond that established by Appendix B of the *Memorandum Opinion and Order*<sup>3</sup>. The average elevation data for 3.2 to 16.1 km along each radial has been determined using terrain data from the Global 30-second National Geophysical Data Center (“NGDC”) terrain database. The F(50,90) DTV coverage contours have been computed from reference to the propagation data for Channels 7-13, as published by the FCC in Figure 10 and Figure 10a, Section 73.699 of the FCC Rules and Regulations. Utilizing the formula in Section 73.625(b)(2) of the Rules for the effective heights, it is found that the depression angle,  $A_n$ , varies from -.918 to 0.964 degrees.

Table I includes the distances to the F(50,90) 43 and 36 dBu coverage contours, the average elevation 3 to 16 km, and the antenna height above average terrain for the each radial spaced 10 degrees in azimuth. Exhibit E-3 provides a map of the computed coverage contours relative to the NTSC Grade B contour, the Appendix B DTV Allotment and the 5 mile radius of the minor expansion limitation.

### Interference Analysis

The KAIH-DT proposed post-transition DTV facilities will not expand the noise-limited service contour in any direction beyond that established by Appendix B of the Seventh Report

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<sup>3</sup>Ibid .

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") and therefore an interference analysis has not been performed.

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<sup>4</sup> 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<sub>V</sub> = Total Peak Visual ERP in Watts

ERP<sub>A</sub> = Total Aural ERP in Watts

ERP = Power in Watts

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

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<sup>4</sup> The post-transition operations of the other broadcast facilities is based on the ERP of the relative Appendix B allotment facilities and the antenna locations on the proposed tower and may not reflect the actual construction permit applications as proposed by those stations.

<u>Station</u>	<u>Statuts</u>	<u>ERP</u> (kW)	<u>Frequency</u> (MHz)	<u>Ch</u>	<u>RCAGL</u> (m)	<u>Relative</u> <u>Field</u>	<u>S</u> ( $\mu\text{W}/\text{cm}^2$ )	<u>RFF</u> (%)
KOGG-DT	Assumed	50	482-488	16	60.5	0.25	30.5	9.4
KMEB-DT	Assumed	3.2	192-198	10	49	0.15	1.1	0.6
KMAU-DT	Assumed	3.94	204-210	12	49	0.2	2.4	1.2
KAIH-DT	<b>Proposed</b>	3.69	174-180	7	49	0.1	0.6	<u>0.3</u> 11.5%

For the post-transition operation, KAIH-DT proposes to use a top-mounted Dielectric, THA-P2SP-4H/8H-1-B antenna (or equivalent). Using a relative field factor of 0.1 based on the manufacturer's antenna elevation pattern and the procedures outlined in OET Bulletin 65, the maximum RFF resulting from the proposed operation is less than  $0.6 \mu\text{W}/\text{cm}^2$ . This is 0.3% of the  $200 \mu\text{W}/\text{cm}^2$  maximum human exposure to RFF recommended by the current FCC guidelines for the general population.

The total contribution by all assumed post-transition broadcast facilities and the addition of the proposed post-transition operation of KAIH-DT at 2 meters above ground level is less than 12% of the current FCC guidelines for maximum permissible exposure ("MPE") for the general population/uncontrolled exposure.

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.



Environmental Assessment

An environmental assessment (“EA”) will be performed for the proposed site which is not included in this request for a post-transition construction permit and will be submitted by the licensee.

TABLE I  
DTV COVERAGE DATA  
FOR PROPOSED OPERATION OF  
KAIH-DT, WAILUKU, HAWAII  
CHANNEL 7 3.69 KW DA ERP 753 METERS HAAT  
MARCH 2008

<u>Radial</u> N ° E, T	<u>Average*</u>	<u>Effective</u>	<u>Depression</u>	<u>ERP</u>	<u>Distance to Contour</u>	
	<u>Elevation</u> meters	<u>Height</u> meters	<u>Angle</u> degrees		<u>43 dBu</u> km	<u>36 dBu</u> km
0	487.2	923.1	0.842	0.3	79.1	91.6
10	648.5	761.8	0.765	0.1	63.7	77.9
20	881.5	528.8	0.637	0.0	44.6	57.1
30	1103.5	306.8	0.485	0.0	25.2	36.0
40	1435.0	-24.7	-0.138	0.0	6.3	9.5
50	1861.3	-451.0	-0.588	0.0	6.3	9.5
60	2291.4	-881.1	-0.822	0.0	8.7	13.0
70	2509.4	-1099.1	-0.918	0.0	12.1	17.9
80	2027.9	-617.6	-0.688	0.1	17.8	25.6
90	1396.9	13.4	0.101	0.3	24.1	32.8
100	976.7	433.6	0.577	0.8	68.9	82.2
110	683.8	726.5	0.747	1.5	86.6	99.5
120	664.9	745.4	0.756	2.2	90.3	103.6
130	617.2	793.1	0.780	3.0	93.7	107.1
140	553.2	857.1	0.811	3.5	96.3	109.7
150	545.1	865.2	0.815	3.7	96.9	110.3
160	528.9	881.4	0.822	3.5	96.8	110.1
170	442.7	967.6	0.862	3.0	96.9	110.3
180	424.2	986.1	0.870	2.2	94.8	108.2
190	418.7	991.6	0.872	1.4	91.5	104.6
200	382.1	1028.2	0.888	0.8	86.9	99.8
210	421.2	989.1	0.871	0.3	80.2	92.7
220	319.3	1091.0	0.915	0.2	75.6	88.9
230	308.3	1102.0	0.920	0.2	75.7	89.0
240	240.9	1169.4	0.947	0.3	82.0	95.0
250	248.3	1162.0	0.944	0.8	88.4	101.8
260	199.0	1211.3	0.964	1.4	94.1	108.1
270	220.4	1189.9	0.956	2.2	97.6	111.8
280	228.8	1181.5	0.952	3.0	100.0	114.2

TABLE I  
DTV COVERAGE DATA  
FOR PROPOSED OPERATION OF  
KAIH-DT, WAILUKU, HAWAII  
CHANNEL 7 3.69 KW DA ERP 753 METERS HAAT  
MARCH 2008  
 (continued)

<u>Radial</u> N ° E, T	<u>Average*</u> <u>Elevation</u>	<u>Effective</u> <u>Height</u>	<u>Depression</u> <u>Angle</u>	<u>ERP</u> kW	<u>Distance to Contour</u>	
	meters	meters	degrees		<u>43 dBu</u> km	<u>36 dBu</u> km
290	206.6	1203.7	0.961	3.5	101.7	116.1
300	209.5	1200.8	0.960	3.7	102.1	116.6
310	207.5	1202.8	0.961	3.5	101.6	116.1
320	199.1	1211.2	0.964	3.0	100.3	114.7
330	244.6	1165.7	0.946	2.2	97.3	111.4
340	330.8	1079.5	0.910	1.5	92.7	106.2
350	442.7	967.6	0.862	0.8	86.6	99.3

\*Based on data from Global 30-second terrain

DTV Channel 7 (174-180 MHz)  
 Average Elevation 3.2 to 16.1 km 657.3 meters AMSL  
 Center of Radiation 1410.3 meters AMSL  
 Antenna Height Above Average Terrain 753 meters  
 Effective Radiated Power 3.69 kW (5.67 dBk) Max

North Latitude: 20° 39' 37"  
 West Longitude: 156° 21' 46"

(NAD-27)

ABOVE GROUND

ABOVE MEAN SEA LEVEL

60.7 m (199.1')

1422 m (4665.4')

C/R 49 m (160.8')  
**PROPOSED KAI-DT ANTENNA**  
**CHANNEL 7**

1410.3 m (4627.0') C/R

PAINTING AND LIGHTING ARE IN  
ACCORDANCE WITH F.A.A. RULES  
AND REGULATIONS.

SELF-SUPPORTING TOWER

0 m (0')

1361.3 m (4466.2')

NOT TO SCALE

EXHIBIT E - 1  
VERTICAL SKETCH  
FOR THE PROPOSED OPERATION OF  
**KAI-DT, WAILUKU, HAWAII**  
MARCH 2008

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

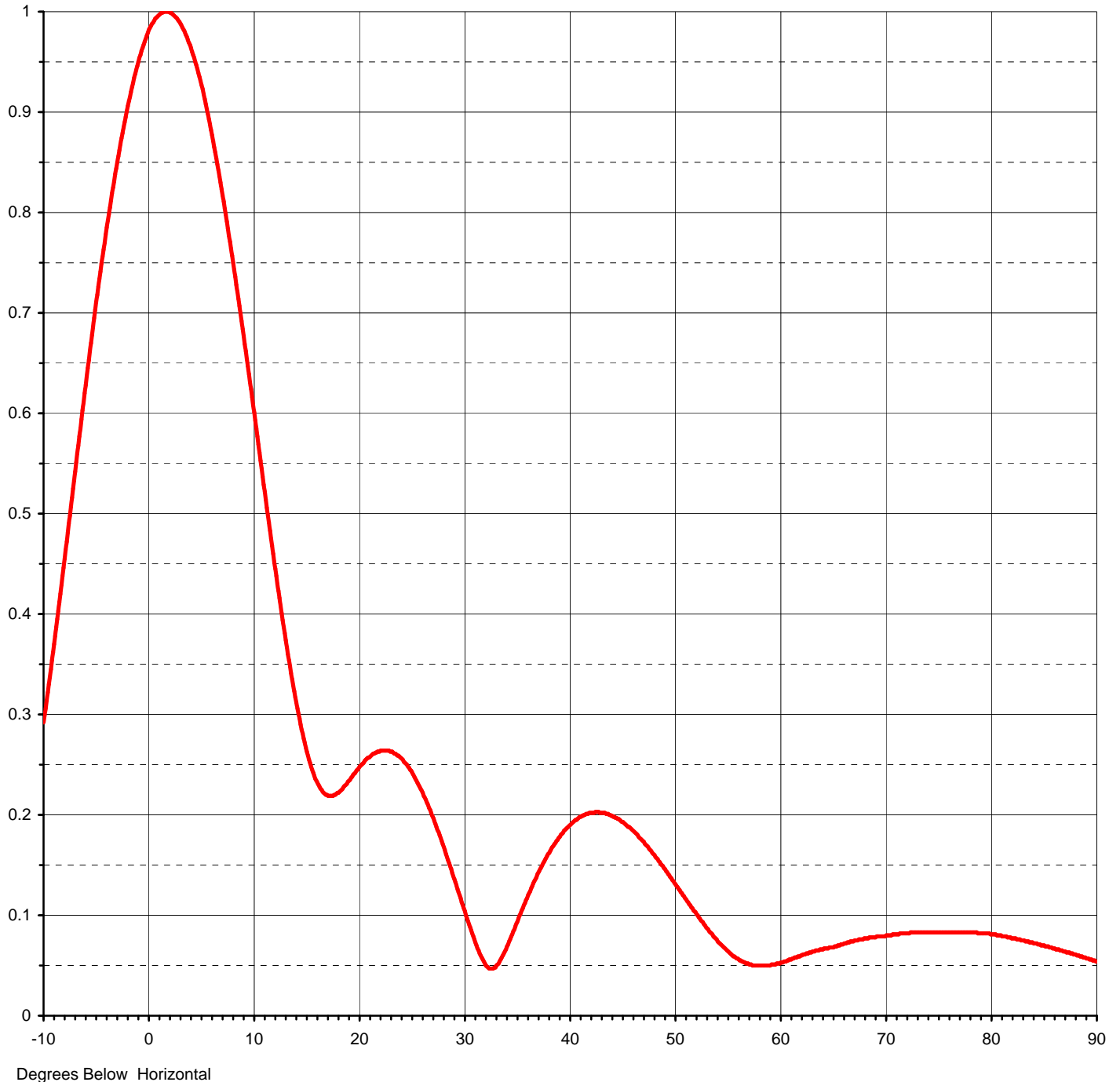
EXHIBIT E-2  
ANTENNA DATA



Proposal Number	<b>C-00447</b>	
Date	<b>28-Jun-06</b>	
Call Letters	<b>KAIL</b>	Channel <b>7</b>
Location	<b>Haleakala, Maui, HI</b>	
Customer	<b>Maui LLC</b>	
Antenna Type	<b>THA-P2SP-4H/8H-1-B</b>	

## ELEVATION PATTERN

RMS Gain at Main Lobe	<b>3.80 ( 5.80 dB )</b>	Beam Tilt	<b>1.70 deg</b>
RMS Gain at Horizontal	<b>3.70 ( 5.68 dB )</b>	Frequency	<b>177.00 MHz</b>
Calculated / Measured	<b>Calculated</b>	Drawing #	<b>04H038160-90</b>





Proposal Number **C-00447**

Date **28-Jun-06**

Call Letters **KAIL** Channel **7**

Location **Haleakala, Maui, HI**

Customer **Maui LLC**

Antenna Type **THA-P2SP-4H/8H-1-B**

## TABULATION OF ELEVATION PATTERN

Elevation Pattern Drawing #: **04H038160-90**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.292	2.4	0.996	10.6	0.561	30.5	0.091	51.0	0.117	71.5	0.082
-9.5	0.330	2.6	0.994	10.8	0.545	31.0	0.076	51.5	0.110	72.0	0.082
-9.0	0.370	2.8	0.991	11.0	0.529	31.5	0.062	52.0	0.103	72.5	0.083
-8.5	0.412	3.0	0.988	11.5	0.491	32.0	0.052	52.5	0.095	73.0	0.083
-8.0	0.455	3.2	0.984	12.0	0.452	32.5	0.047	53.0	0.088	73.5	0.083
-7.5	0.498	3.4	0.980	12.5	0.416	33.0	0.048	53.5	0.082	74.0	0.083
-7.0	0.542	3.6	0.975	13.0	0.381	33.5	0.056	54.0	0.076	74.5	0.083
-6.5	0.585	3.8	0.969	13.5	0.348	34.0	0.066	54.5	0.070	75.0	0.083
-6.0	0.628	4.0	0.964	14.0	0.317	34.5	0.079	55.0	0.065	75.5	0.083
-5.5	0.670	4.2	0.957	14.5	0.290	35.0	0.092	55.5	0.060	76.0	0.083
-5.0	0.711	4.4	0.950	15.0	0.267	35.5	0.105	56.0	0.057	76.5	0.083
-4.5	0.749	4.6	0.943	15.5	0.248	36.0	0.117	56.5	0.054	77.0	0.083
-4.0	0.785	4.8	0.935	16.0	0.234	36.5	0.129	57.0	0.052	77.5	0.083
-3.5	0.819	5.0	0.927	16.5	0.225	37.0	0.141	57.5	0.050	78.0	0.083
-3.0	0.850	5.2	0.918	17.0	0.220	37.5	0.151	58.0	0.050	78.5	0.083
-2.8	0.862	5.4	0.908	17.5	0.219	38.0	0.161	58.5	0.050	79.0	0.082
-2.6	0.874	5.6	0.898	18.0	0.222	38.5	0.169	59.0	0.050	79.5	0.082
-2.4	0.885	5.8	0.888	18.5	0.226	39.0	0.177	59.5	0.051	80.0	0.081
-2.2	0.895	6.0	0.877	19.0	0.233	39.5	0.184	60.0	0.052	80.5	0.080
-2.0	0.906	6.2	0.865	19.5	0.240	40.0	0.189	60.5	0.054	81.0	0.079
-1.8	0.915	6.4	0.854	20.0	0.246	40.5	0.194	61.0	0.056	81.5	0.078
-1.6	0.925	6.6	0.842	20.5	0.252	41.0	0.198	61.5	0.058	82.0	0.077
-1.4	0.934	6.8	0.830	21.0	0.257	41.5	0.200	62.0	0.060	82.5	0.076
-1.2	0.942	7.0	0.817	21.5	0.261	42.0	0.202	62.5	0.062	83.0	0.075
-1.0	0.950	7.2	0.804	22.0	0.263	42.5	0.203	63.0	0.063	83.5	0.074
-0.8	0.957	7.4	0.791	22.5	0.264	43.0	0.202	63.5	0.065	84.0	0.072
-0.6	0.964	7.6	0.777	23.0	0.263	43.5	0.201	64.0	0.066	84.5	0.071
-0.4	0.970	7.8	0.764	23.5	0.261	44.0	0.199	64.5	0.067	85.0	0.070
-0.2	0.976	8.0	0.750	24.0	0.257	44.5	0.197	65.0	0.068	85.5	0.068
0.0	0.982	8.2	0.736	24.5	0.251	45.0	0.193	65.5	0.070	86.0	0.067
0.2	0.986	8.4	0.721	25.0	0.244	45.5	0.189	66.0	0.072	86.5	0.065
0.4	0.989	8.6	0.707	25.5	0.234	46.0	0.185	66.5	0.073	87.0	0.064
0.6	0.993	8.8	0.692	26.0	0.224	46.5	0.180	67.0	0.075	87.5	0.062
0.8	0.995	9.0	0.677	26.5	0.212	47.0	0.174	67.5	0.076	88.0	0.061
1.0	0.997	9.2	0.662	27.0	0.199	47.5	0.168	68.0	0.077	88.5	0.059
1.2	0.999	9.4	0.647	27.5	0.185	48.0	0.161	68.5	0.078	89.0	0.057
1.4	1.000	9.6	0.631	28.0	0.171	48.5	0.154	69.0	0.078	89.5	0.056
1.6	1.000	9.8	0.624	28.5	0.155	49.0	0.147	69.5	0.079	90.0	0.054
1.8	1.000	10.0	0.608	29.0	0.139	49.5	0.140	70.0	0.080		
2.0	0.999	10.2	0.593	29.5	0.123	50.0	0.132	70.5	0.080		
2.2	0.998	10.4	0.577	30.0	0.107	50.5	0.125	71.0	0.081		

## AZIMUTH PATTERN

Gain

**2.50**

**( 3.98 dB)**

Frequency

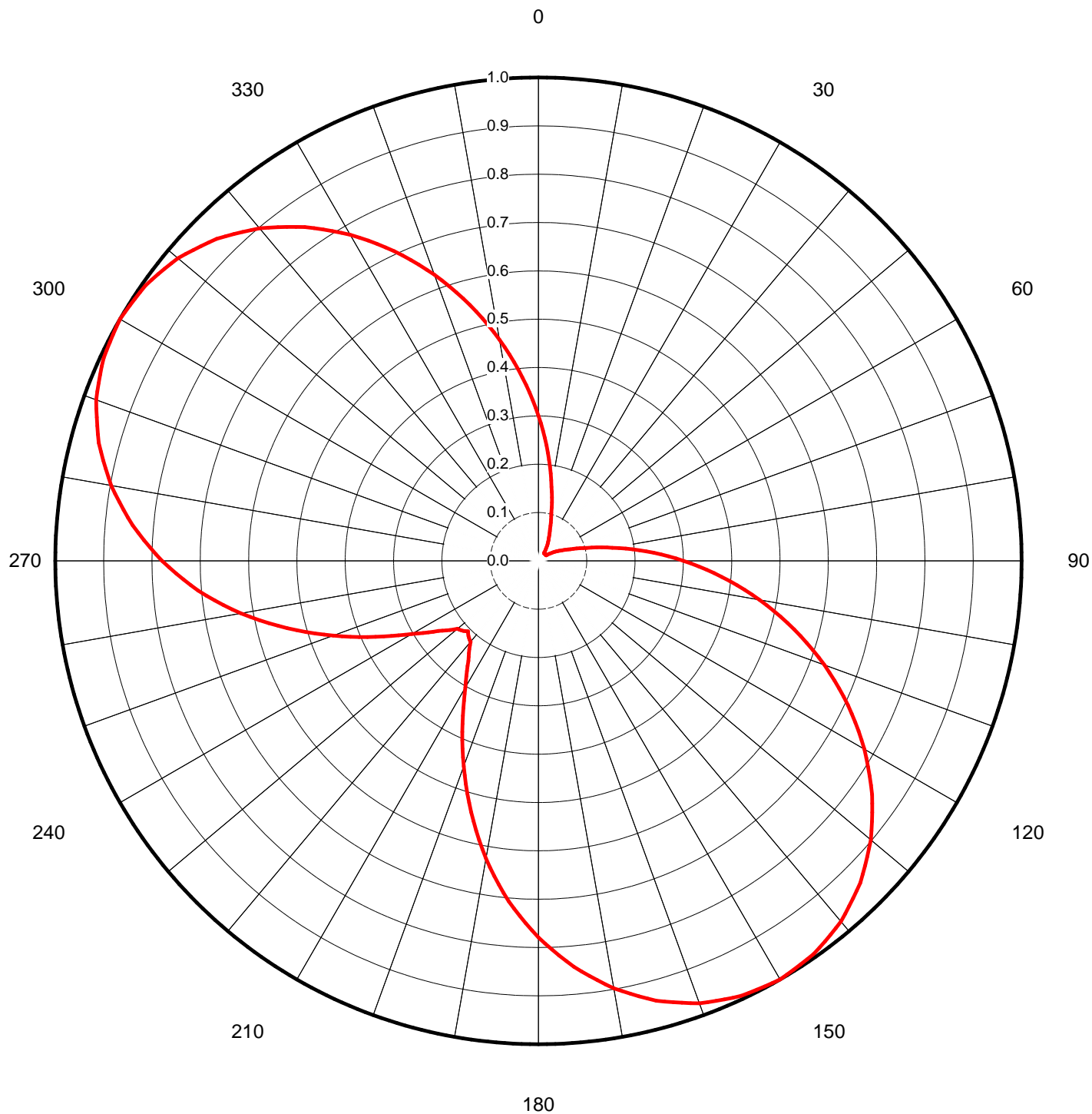
**177.00 MHz**

Calculated / Measured

**Calculated**

Drawing #

**THA-P2SP-1770**







Proposal Number **C-00447**  
Date **28-Jun-06**  
Call Letters **KAIL** Channel **7**  
Location **Haleakala, Maui, HI**  
Customer **Maui LLC**  
Antenna Type **THA-P2SP-4H/8H-1-B**

## TABULATION OF AZIMUTH PATTERN

Azimuth Pattern Drawing #: **THA-P2SP-1770**

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
0	0.300	45	0.020	90	0.300	135	0.942	180	0.779	225	0.206	270	0.779	315	0.942
1	0.285	46	0.020	91	0.316	136	0.948	181	0.765	226	0.210	271	0.792	316	0.933
2	0.270	47	0.020	92	0.332	137	0.955	182	0.750	227	0.212	272	0.805	317	0.924
3	0.254	48	0.020	93	0.349	138	0.961	183	0.736	228	0.215	273	0.817	318	0.916
4	0.239	49	0.020	94	0.365	139	0.968	184	0.721	229	0.217	274	0.830	319	0.907
5	0.224	50	0.019	95	0.381	140	0.974	185	0.707	230	0.218	275	0.843	320	0.898
6	0.210	51	0.019	96	0.398	141	0.978	186	0.691	231	0.225	276	0.854	321	0.887
7	0.196	52	0.019	97	0.414	142	0.982	187	0.675	232	0.232	277	0.865	322	0.876
8	0.183	53	0.019	98	0.431	143	0.985	188	0.658	233	0.239	278	0.876	323	0.865
9	0.169	54	0.020	99	0.448	144	0.989	189	0.642	234	0.246	279	0.887	324	0.854
10	0.155	55	0.020	100	0.465	145	0.993	190	0.625	235	0.253	280	0.898	325	0.843
11	0.145	56	0.023	101	0.481	146	0.994	191	0.608	236	0.262	281	0.907	326	0.830
12	0.134	57	0.026	102	0.498	147	0.996	192	0.590	237	0.272	282	0.916	327	0.817
13	0.124	58	0.030	103	0.515	148	0.997	193	0.573	238	0.281	283	0.924	328	0.805
14	0.113	59	0.033	104	0.531	149	0.999	194	0.555	239	0.292	284	0.933	329	0.792
15	0.103	60	0.036	105	0.548	150	1.000	195	0.538	240	0.303	285	0.942	330	0.779
16	0.096	61	0.039	106	0.564	151	0.999	196	0.521	241	0.315	286	0.948	331	0.765
17	0.090	62	0.042	107	0.581	152	0.997	197	0.503	242	0.328	287	0.955	332	0.750
18	0.083	63	0.044	108	0.597	153	0.996	198	0.486	243	0.342	288	0.961	333	0.736
19	0.077	64	0.047	109	0.614	154	0.994	199	0.469	244	0.357	289	0.968	334	0.721
20	0.070	65	0.050	110	0.630	155	0.993	200	0.452	245	0.372	290	0.974	335	0.707
21	0.066	66	0.054	111	0.645	156	0.989	201	0.436	246	0.387	291	0.978	336	0.692
22	0.062	67	0.058	112	0.661	157	0.985	202	0.419	247	0.403	292	0.982	337	0.676
23	0.058	68	0.062	113	0.676	158	0.982	203	0.403	248	0.419	293	0.985	338	0.661
24	0.054	69	0.066	114	0.692	159	0.978	204	0.387	249	0.436	294	0.989	339	0.645
25	0.050	70	0.070	115	0.707	160	0.974	205	0.372	250	0.452	295	0.993	340	0.630
26	0.047	71	0.077	116	0.721	161	0.968	206	0.357	251	0.469	296	0.994	341	0.614
27	0.044	72	0.083	117	0.736	162	0.961	207	0.342	252	0.486	297	0.996	342	0.597
28	0.042	73	0.090	118	0.750	163	0.955	208	0.328	253	0.503	298	0.997	343	0.581
29	0.039	74	0.096	119	0.765	164	0.948	209	0.315	254	0.521	299	0.999	344	0.564
30	0.036	75	0.103	120	0.779	165	0.942	210	0.303	255	0.538	300	1.000	345	0.548
31	0.033	76	0.113	121	0.792	166	0.933	211	0.292	256	0.555	301	0.999	346	0.531
32	0.030	77	0.124	122	0.805	167	0.924	212	0.281	257	0.573	302	0.997	347	0.515
33	0.026	78	0.134	123	0.817	168	0.916	213	0.272	258	0.590	303	0.996	348	0.498
34	0.023	79	0.145	124	0.830	169	0.907	214	0.262	259	0.608	304	0.994	349	0.481
35	0.020	80	0.155	125	0.843	170	0.898	215	0.253	260	0.625	305	0.993	350	0.465
36	0.020	81	0.169	126	0.854	171	0.887	216	0.246	261	0.642	306	0.989	351	0.448
37	0.019	82	0.183	127	0.865	172	0.876	217	0.239	262	0.658	307	0.985	352	0.431
38	0.019	83	0.196	128	0.876	173	0.865	218	0.232	263	0.675	308	0.982	353	0.414
39	0.019	84	0.210	129	0.887	174	0.854	219	0.225	264	0.691	309	0.978	354	0.398
40	0.019	85	0.224	130	0.898	175	0.843	220	0.218	265	0.707	310	0.974	355	0.381
41	0.020	86	0.239	131	0.907	176	0.830	221	0.217	266	0.721	311	0.968	356	0.365
42	0.020	87	0.254	132	0.916	177	0.817	222	0.215	267	0.736	312	0.961	357	0.349
43	0.020	88	0.270	133	0.924	178	0.805	223	0.212	268	0.750	313	0.955	358	0.332
44	0.020	89	0.285	134	0.933	179	0.792	224	0.210	269	0.765	314	0.948	359	0.316

