

**APPLICATION TO MODIFY LICENSE
TRANSLATOR K233AK, HANAIEI. HI**

May 2018

TECHNICAL STATEMENT

This technical statement including the attached exhibits have been prepared on behalf of Ohana Broadcast Company, LLC (“Ohana”), licensee of FM translator station, K233AK, Hanalei, HI, Facility ID #85914, and is in support of a minor modification of the fill-in translator K233AK rebroadcasting KQNG-FM, Lihue, HI, Facility ID 58937 which will soon be displaced by the application for KHKU (FM) 232A, which is upgrading to 232C2 and relocating in a fashion that will be mutually exclusive to the continued operation of K233AK on 233D. Ohana is requesting a minor modification of the existing license to 234D (first adjacent channel) and modify the antenna and power. As part of this application, the coordinates and other details are corrected.

Facilities Proposed

Location (NAD27)	22° 13' 26" N Latitude, 159° 30' 00" W Longitude
Channel	234D (94.7MHz)
Tower Overall AGL Height-	14m
Tower ASR	None
Proposed Antenna	Directional – Scala CA5-FM-CP (Exhibit A)
Antenna AGL Height-	11m
Site AMSL Height-	35m
COR AMSL Height	46m
ERP	250w

COMPLIANCE, 74.1201(g), 74.1233(a)(1), 74.1204(a), and 74.1204(d)

K233AK is expected to be displaced by KHKU (FM) which has applied for a construction permit to upgrade from 232A to 232C2. Following this upgrade, the first adjacent operation of K233AK on 233D would create impermissible interference to KHKU. Therefore, Ohana is proactively proposing to implement a minor change to become 2nd adjacent to KHKU by modifying its frequency from 233D to 234D and thus eliminate any potential conflict. This application also will correct erroneous NAD27 site coordinates and proposes to improve coverage of the translator.

Because the proposed operation is at the same location, this proposal is compliant with the portion of FCC rule 74.1233(a)(1) requiring any minor change of a translator's facilities to continue to provide 1mV/m service to some portion of its previously authorized service area.

Below is the allocation table in accordance with 74.1204

ComStudy 2.2 search of channel 234 (94.7 MHz Class D) at 22-13-26.0 N,159-30-0.0 W.

CALL	CITY	ST	CHN	CL	DIST	SEP	BRNG	CLEARANCE
KHKU (APPL)	HANAPEPE	HI	232	C2	27.54	0.00	179.9	14.34 dB Exhibit B
KESU-LP	LIHUE	HI	235	LP100	28.29	13.00	149.8	29.00 dB Exhibit B
KHKU (LIC)	HANAPEPE	HI	232	A	36.25	0.00	194.6	32.34 dB
K288GJ	ELEELE	HI	288	D	34.57	0.00	185.4	34.6
KUMU-FM	HONOLULU	HI	234	C1	200.81	0.00	121.0	35.65 dB

Exhibit B shows overlap to the closest facilities in compliance with 74.1204(a). There will be no overlap of any protected contours by interfering contours from the proposed translator.

Exhibit C details the calculated “distance to contour” for KQNG-FM using FCC 30 second terrain data. Exhibit D details the 60dBu contour for the proposed KHKU 232C2 application.

Exhibit E demonstrates compliance with 74.1201g demonstrating that the proposed 60dBu contour will be entirely contained within the 60dBu contour of KQNG-FM except in limited areas over the water.

Environmental Exhibit

The K233AK facility as proposed will utilize a directional, Scala CA5-FM-CP H+V polarized antenna operating at 250 watts and located on an existing pole attached to the roof of a hotel. The antenna will be on the same pole and at the same height as that currently. The roof is not accessible to the public and the antenna will be powered down if maintenance personnel are near the antenna. The "FM Model" program calculates the RF at 2m AGL to be $56.7\mu\text{W}/\text{cm}^2$ which is 28.4% of the MPE allowed (not including attenuation of the roof).

Based upon the preceding, it is believed that the proposed K233AK operation is compliant with environmental rules and excluded from further environmental review under §1.1306 of the FCC rules and regulations.

Respectfully Submitted



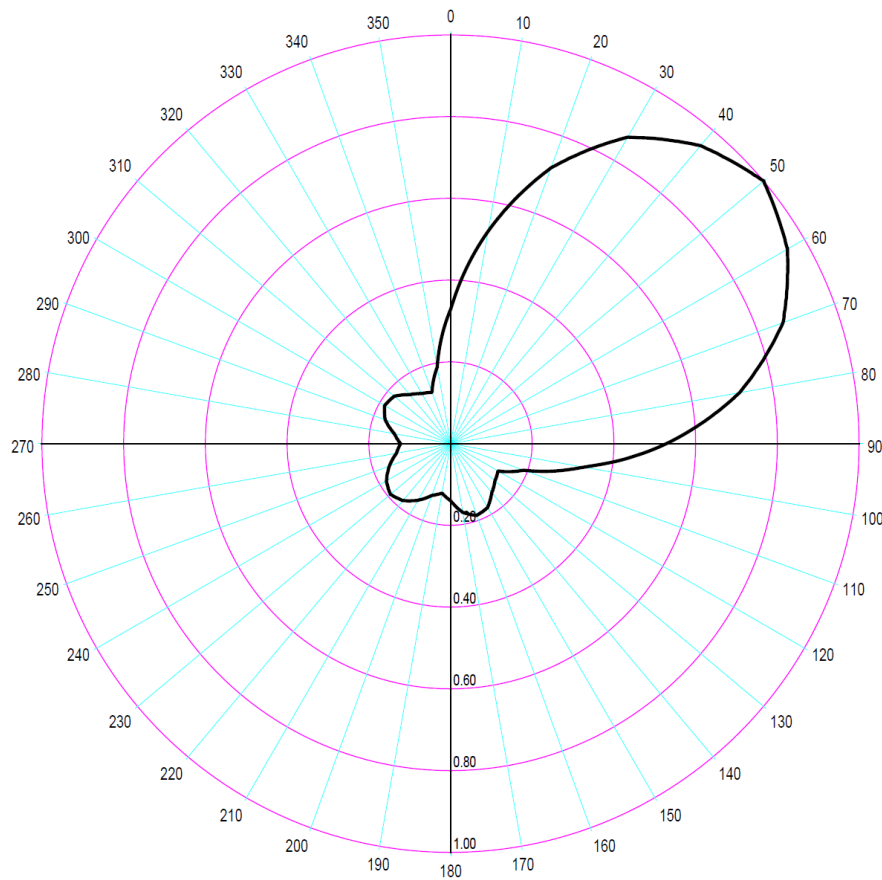
Bert Goldman
Goldman Engineering Mgmt.
560 Perkins Way
Auburn, CA 95603
(214) 395-5067
bert@bgoldman.net

EXHIBIT A- Antenna Pattern

ComStudy

SCACA5-FM-CP

Horizontal Pattern



Azim	Rel.FS	ERP [W]	dBk	Azim	Rel.FS	ERP [W]	dBk	Azim	Rel.FS	ERP [W]	dBk	Azim	Rel.FS	ERP [W]	dBk
0.0	0.329	27.060	-15.677	90.0	0.528	69.696	-11.568	180.0	0.140	4.900	-23.098	270.0	0.123	3.782	-24.222
5.0	0.428	45.796	-13.392	95.0	0.428	45.796	-13.392	185.0	0.131	4.290	-23.675	275.0	0.131	4.290	-23.675
10.0	0.528	69.696	-11.568	100.0	0.329	27.060	-15.677	190.0	0.123	3.782	-24.222	280.0	0.140	4.900	-23.098
15.0	0.623	97.032	-10.131	105.0	0.259	16.770	-17.755	195.0	0.129	4.160	-23.809	285.0	0.155	6.006	-22.214
20.0	0.718	128.881	-8.898	110.0	0.190	9.025	-20.446	200.0	0.135	4.556	-23.414	290.0	0.171	7.310	-21.361
25.0	0.792	156.816	-8.046	115.0	0.162	6.561	-21.830	205.0	0.147	5.402	-22.674	295.0	0.179	8.010	-20.964
30.0	0.866	187.489	-7.270	120.0	0.134	4.489	-23.479	210.0	0.160	6.400	-21.938	300.0	0.187	8.742	-20.584
35.0	0.909	206.570	-6.849	125.0	0.138	4.761	-23.223	215.0	0.171	7.310	-21.361	305.0	0.184	8.464	-20.724
40.0	0.952	226.576	-6.448	130.0	0.142	5.041	-22.975	220.0	0.182	8.281	-20.819	310.0	0.181	8.190	-20.867
45.0	0.976	238.144	-6.232	135.0	0.149	5.550	-22.557	225.0	0.187	8.742	-20.584	315.0	0.169	7.140	-21.463
50.0	1.000	250.000	-6.021	140.0	0.157	6.162	-22.103	230.0	0.193	9.312	-20.309	320.0	0.157	6.162	-22.103
55.0	0.976	238.144	-6.232	145.0	0.169	7.140	-21.463	235.0	0.187	8.742	-20.584	325.0	0.149	5.550	-22.557
60.0	0.952	226.576	-6.448	150.0	0.181	8.190	-20.867	240.0	0.182	8.281	-20.819	330.0	0.142	5.041	-22.975
65.0	0.909	206.570	-6.849	155.0	0.184	8.464	-20.724	245.0	0.171	7.310	-21.361	335.0	0.138	4.761	-23.223
70.0	0.866	187.489	-7.270	160.0	0.187	8.742	-20.584	250.0	0.160	6.400	-21.938	340.0	0.134	4.489	-23.479
75.0	0.792	156.816	-8.046	165.0	0.179	8.010	-20.964	255.0	0.147	5.402	-22.674	345.0	0.162	6.561	-21.830
80.0	0.718	128.881	-8.898	170.0	0.171	7.310	-21.361	260.0	0.135	4.556	-23.414	350.0	0.190	9.025	-20.446
85.0	0.623	97.032	-10.131	175.0	0.155	6.006	-22.214	265.0	0.129	4.160	-23.809	355.0	0.259	16.770	-17.755

EXHIBIT B- 74.1204a Compliance

K233AK PROP 234D Allotment Contours

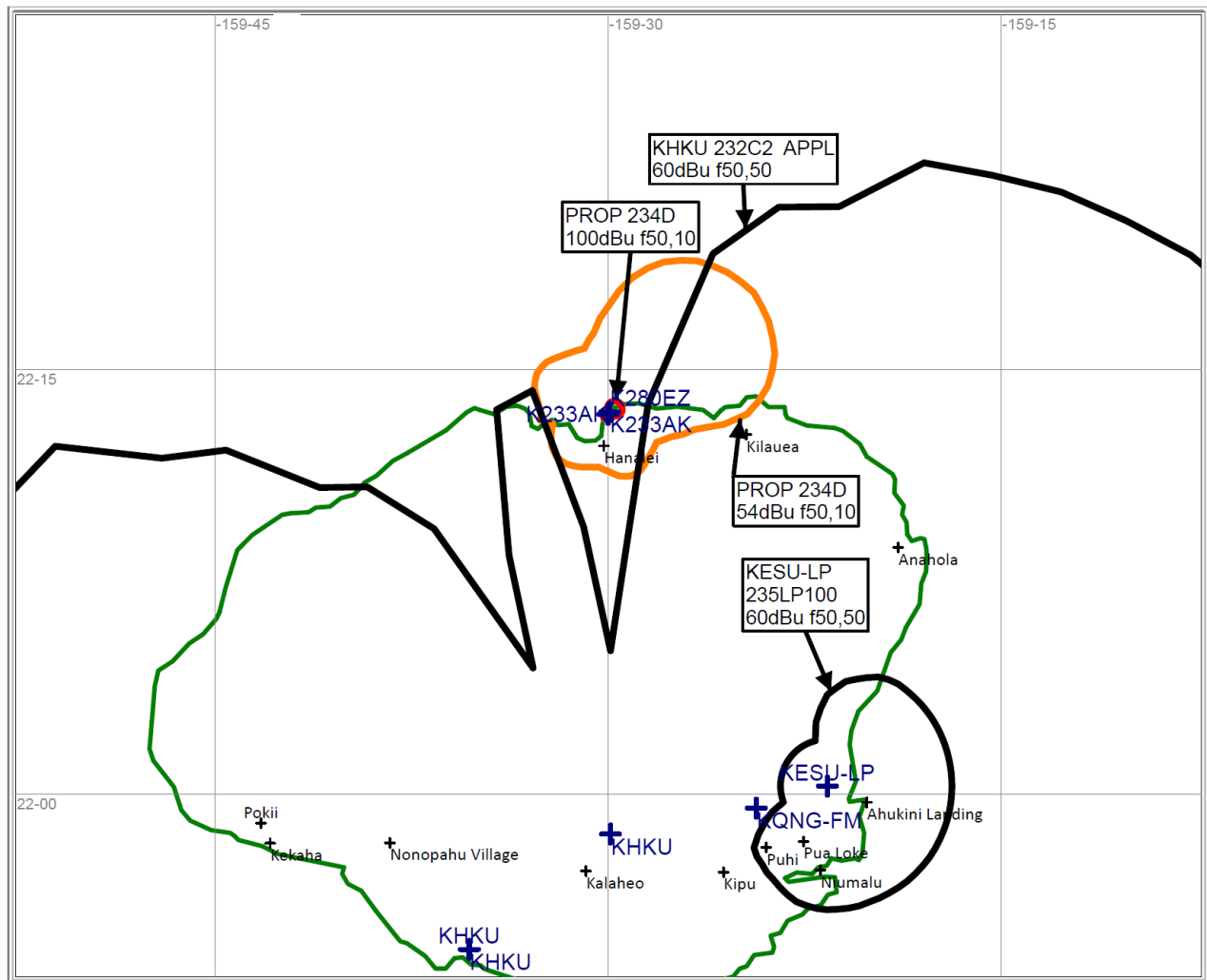


EXHIBIT C- DISTANCE TO CONTOUR REPORT, KQNG-FM, LIC 60dBu 30 sec FCC Terrain (360, 1 degree Radials)

Callsign : KQNG-FM
 Coordinates : 21-59-31.0 N, 159-24-21.0 W
 Comments : Date Imported: 2018-05-15
 Frequency (MHz): 93.50000
 HAAT (m): 125.81 AMSL (m): 290.00
 Elevation (m): 183.00 Tower AGL (m): 107.00
 ERP (w): 51000
 TX power (w): 51 Gain (dB): 0.00
 City/State : LIHUE, HI
 ARN : BLH-20130702ABF
 Distance (km): 22
 Licensee : OHANA BROADCAST COMPANY LLC

Contour type : F(50,50)
 Signal strength : 60.000 dBu
 Area covered : 8693.200 sq. km
 Population covered: 52961 persons
 Contour HAAT (m) : 140.9

Brg	AT	HAAT	Dist	Brg	AT	HAAT	Dist	Brg	AT	HAAT	Dist	Brg	AT	HAAT	Dist
0	284	6	26.6	90	14	276	63.7	180	33	257	62.3	270	336	-46	26.6
1	240	50	33.7	91	14	276	63.7	181	33	257	62.3	271	336	-46	26.6
2	235	55	35.2	92	14	276	63.7	182	33	257	62.3	272	363	-73	26.6
3	234	56	35.5	93	14	276	63.7	183	33	257	62.3	273	380	-90	26.6
4	217	73	39.6	94	14	276	63.7	184	35	255	62.1	274	392	-102	26.6
5	191	99	44.8	95	14	276	63.7	185	35	255	62.1	275	397	-107	26.6
6	185	105	45.8	96	14	276	63.7	186	35	255	62.1	276	403	-113	26.6
7	182	108	46.3	97	14	276	63.7	187	36	254	62.0	277	404	-114	26.6
8	167	123	48.6	98	14	276	63.7	188	38	252	61.9	278	405	-115	26.6
9	160	130	49.6	99	14	276	63.7	189	41	249	61.6	279	416	-126	26.6
10	151	139	50.9	100	14	276	63.7	190	40	250	61.7	280	431	-141	26.6
11	141	149	52.2	101	14	276	63.7	191	42	248	61.6	281	435	-145	26.6
12	135	155	53.0	102	14	276	63.7	192	43	247	61.5	282	428	-138	26.6
13	132	158	53.4	103	14	276	63.7	193	47	243	61.2	283	413	-123	26.6
14	123	167	54.4	104	14	276	63.7	194	50	240	60.9	284	424	-134	26.6
15	115	175	55.3	105	13	277	63.8	195	50	240	60.9	285	424	-134	26.6
16	114	176	55.4	106	13	277	63.8	196	56	234	60.5	286	423	-133	26.6
17	110	180	55.8	107	14	276	63.7	197	58	232	60.3	287	416	-126	26.6
18	100	190	56.7	108	13	277	63.8	198	57	233	60.4	288	421	-131	26.6
19	99	191	56.8	109	13	277	63.8	199	57	233	60.4	289	435	-145	26.6
20	96	194	57.0	110	14	276	63.7	200	60	230	60.1	290	447	-157	26.6
21	89	201	57.6	111	14	276	63.7	201	58	232	60.3	291	440	-150	26.6
22	84	206	58.1	112	12	278	63.9	202	57	233	60.4	292	432	-142	26.6
23	80	210	58.4	113	12	278	63.9	203	58	232	60.3	293	429	-139	26.6
24	78	212	58.6	114	12	278	63.9	204	59	231	60.2	294	437	-147	26.6
25	75	215	58.9	115	11	279	64.0	205	58	232	60.3	295	434	-144	26.6
26	74	216	58.9	116	11	279	64.0	206	60	230	60.1	296	455	-165	26.6
27	75	215	58.9	117	11	279	64.0	207	59	231	60.2	297	452	-162	26.6
28	75	215	58.9	118	11	279	64.0	208	59	231	60.2	298	460	-170	26.6
29	75	215	58.9	119	11	279	64.0	209	59	231	60.2	299	470	-180	26.6
30	68	222	59.5	120	10	280	64.1	210	60	230	60.1	300	499	-209	26.6
31	63	227	59.9	121	10	280	64.1	211	61	229	60.0	301	479	-189	26.6
32	59	231	60.2	122	10	280	64.1	212	66	224	59.6	302	492	-202	26.6
33	53	237	60.7	123	10	280	64.1	213	68	222	59.5	303	464	-174	26.6
34	49	241	61.0	124	10	280	64.1	214	69	221	59.4	304	530	-240	26.6
35	48	242	61.1	125	10	280	64.1	215	71	219	59.2	305	549	-259	26.6
36	45	245	61.3	126	10	280	64.1	216	72	218	59.1	306	592	-302	26.6
37	43	247	61.5	127	10	280	64.1	217	72	218	59.1	307	629	-339	26.6
38	40	250	61.7	128	10	280	64.1	218	75	215	58.9	308	622	-332	26.6
39	38	252	61.9	129	10	280	64.1	219	78	212	58.6	309	615	-325	26.6
40	34	256	62.2	130	10	280	64.1	220	79	211	58.5	310	578	-288	26.6
41	32	258	62.4	131	11	279	64.0	221	82	208	58.2	311	602	-312	26.6
42	30	260	62.5	132	11	279	64.0	222	84	206	58.1	312	575	-285	26.6
43	28	262	62.7	133	11	279	64.0	223	95	195	57.1	313	502	-212	26.6

44	28	262	62.7	134	10	280	64.1	224	96	194	57.0	314	489	-199	26.6
45	27	263	62.7	135	10	280	64.1	225	97	193	56.9	315	512	-222	26.6
46	26	264	62.8	136	10	280	64.1	226	105	185	56.2	316	503	-213	26.6
47	27	263	62.7	137	10	280	64.1	227	108	182	56.0	317	488	-198	26.6
48	27	263	62.7	138	10	280	64.1	228	112	178	55.6	318	483	-193	26.6
49	26	264	62.8	139	10	280	64.1	229	123	167	54.4	319	468	-178	26.6
50	26	264	62.8	140	10	280	64.1	230	130	160	53.6	320	441	-151	26.6
51	26	264	62.8	141	10	280	64.1	231	134	156	53.1	321	454	-164	26.6
52	26	264	62.8	142	10	280	64.1	232	142	148	52.1	322	404	-114	26.6
53	26	264	62.8	143	10	280	64.1	233	150	140	51.0	323	380	-90	26.6
54	27	263	62.7	144	10	280	64.1	234	154	136	50.4	324	361	-71	26.6
55	28	262	62.7	145	11	279	64.0	235	157	133	50.0	325	370	-80	26.6
56	28	262	62.7	146	11	279	64.0	236	166	124	48.8	326	355	-65	26.6
57	28	262	62.7	147	11	279	64.0	237	174	116	47.6	327	343	-53	26.6
58	25	265	62.9	148	10	280	64.1	238	173	117	47.8	328	321	-31	26.6
59	25	265	62.9	149	10	280	64.1	239	181	109	46.5	329	318	-28	26.6
60	25	265	62.9	150	10	280	64.1	240	176	114	47.3	330	304	-14	26.6
61	25	265	62.9	151	15	275	63.7	241	176	114	47.3	331	282	8	26.6
62	26	264	62.8	152	15	275	63.7	242	187	103	45.5	332	259	31	27.0
63	26	264	62.8	153	12	278	63.9	243	192	98	44.6	333	243	47	32.7
64	26	264	62.8	154	12	278	63.9	244	196	94	43.9	334	229	61	36.9
65	27	263	62.7	155	12	278	63.9	245	195	95	44.0	335	225	65	37.8
66	28	262	62.7	156	12	278	63.9	246	201	89	42.9	336	219	71	39.2
67	27	263	62.7	157	12	278	63.9	247	199	91	43.3	337	219	71	39.2
68	27	263	62.7	158	11	279	64.0	248	209	81	41.3	338	225	65	37.8
69	27	263	62.7	159	11	279	64.0	249	233	57	35.8	339	229	61	36.9
70	27	263	62.7	160	15	275	63.7	250	235	55	35.2	340	233	57	35.8
71	28	262	62.7	161	17	273	63.5	251	256	34	28.0	341	235	55	35.2
72	24	266	63.0	162	17	273	63.5	252	247	43	31.2	342	240	50	33.7
73	22	268	63.1	163	15	275	63.7	253	246	44	31.6	343	244	46	32.3
74	21	269	63.2	164	15	275	63.7	254	256	34	28.0	344	246	44	31.6
75	21	269	63.2	165	15	275	63.7	255	267	23	26.6	345	250	40	30.1
76	21	269	63.2	166	17	273	63.5	256	277	13	26.6	346	245	45	32.0
77	21	269	63.2	167	18	272	63.4	257	285	5	26.6	347	245	45	32.0
78	21	269	63.2	168	22	268	63.1	258	291	-1	26.6	348	240	50	33.7
79	21	269	63.2	169	22	268	63.1	259	287	3	26.6	349	225	65	37.8
80	21	269	63.2	170	23	267	63.0	260	272	18	26.6	350	228	62	37.1
81	21	269	63.2	171	24	266	63.0	261	279	11	26.6	351	223	67	38.3
82	19	271	63.4	172	30	260	62.5	262	291	-1	26.6	352	225	65	37.8
83	19	271	63.4	173	36	254	62.0	263	290	0	26.6	353	226	64	37.6
84	17	273	63.5	174	36	254	62.0	264	287	3	26.6	354	235	55	35.2
85	15	275	63.7	175	36	254	62.0	265	297	-7	26.6	355	262	28	26.6
86	14	276	63.7	176	36	254	62.0	266	299	-9	26.6	356	259	31	27.0
87	14	276	63.7	177	36	254	62.0	267	303	-13	26.6	357	261	29	26.6
88	14	276	63.7	178	36	254	62.0	268	311	-21	26.6	358	284	6	26.6
89	14	276	63.7	179	33	257	62.3	269	336	-46	26.6	359	284	6	26.6

EXHIBIT D- DISTANCE TO CONTOUR REPORT, KHKU (FM)- APPL
60dBu 30 sec FCC Terrain (72, 5 degree radials)

Callsign : KHKU
Coordinates : 21-58-35.6 N, 159-29-54.7 W
Comments : Date Imported: 2018-05-15
Frequency (MHz): 94.30000
HAAT (m): 580.91 AMSL (m): 850.00
Elevation (m): 836.00 Tower AGL (m): 14.00
ERP (w): 2000
TX power (w): 2 Gain (dB): 0.00
City/State : HANAPEPE, HI
ARN : BPH-20180410AAA
Distance (km): 22
Licensee : KAUAI BROADCAST PARTNERS LLC

Contour type : F(50,50)
Signal strength : 60.000 dBu
Area covered : 0.000 sq. km
Population covered: 0 persons
Contour HAAT (m) : 602.3

Brg	AT	HAAT	Dist	Brg	AT	HAAT	Dist	Brg	AT	HAAT	Dist	Brg	AT	HAAT	Dist
0	873	-23	12.0	90	92	758	56.7	180	59	791	57.6	270	196	654	53.3
5	675	175	28.3	95	83	767	57.0	185	61	789	57.6	275	226	624	52.2
10	513	337	38.6	100	75	775	57.2	190	66	784	57.4	280	263	587	50.8
15	431	419	42.5	105	72	778	57.3	195	81	769	57.0	285	314	536	48.5
20	405	445	43.7	110	84	766	56.9	200	84	766	56.9	290	306	544	48.9
25	313	537	48.5	115	88	762	56.8	205	93	757	56.7	295	358	492	46.1
30	286	564	49.9	120	93	757	56.7	210	101	749	56.4	300	376	474	45.1
35	249	601	51.4	125	86	764	56.9	215	106	744	56.3	305	392	458	44.4
40	219	631	52.5	130	84	766	56.9	220	105	745	56.3	310	518	332	38.3
45	185	665	53.7	135	84	766	56.9	225	96	754	56.6	315	568	282	35.6
50	167	683	54.3	140	76	774	57.2	230	88	762	56.8	320	656	194	29.6
55	157	693	54.6	145	72	778	57.3	235	81	769	57.0	325	682	168	27.8
60	153	697	54.8	150	69	781	57.4	240	83	767	57.0	330	740	110	23.1
65	156	694	54.7	155	63	787	57.5	245	113	737	56.0	335	839	11	12.0
70	158	692	54.6	160	65	785	57.5	250	138	712	55.2	340	772	78	19.4
75	155	695	54.7	165	66	784	57.4	255	145	705	55.0	345	668	182	28.8
80	127	723	55.6	170	67	783	57.4	260	147	703	55.0	350	658	192	29.5
85	110	740	56.1	175	61	789	57.6	265	176	674	54.0	355	766	84	20.2

EXHIBIT E- 74.1201g Compliance

KQNG - K233AK 60dBu Contours

