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COMSEARCH®

November 15, 2000

Mr. Sidney Skjei
Skjei Telecom
7777 Leesburg Pike, Suite 315N
Falls Church, Va. 22043-2403

Re: Onsat Network Communications, Inc.
Coordination Final Reports
Laie, Hawaii
C-Band Transmit/Receive Earth Station

Dear Mr. Skjei:

Enclosed please find the Final Report for the proposed OnSat Network Communications C-band transmit/receive earth station site referenced above.

If you should have any questions, please call.

Sincerely,

COMSEARCH

A handwritten signature in cursive script, reading "Puneet K. Sekhon".

Puneet K. Sekhon
Engineer
Microwave and Satellite Services

Enclosure

FREQUENCY COORDINATION AND INTERFERENCE
ANALYSIS REPORT

PREPARED FOR
ONSAT NETWORK COMMUNICATIONS
LAIE, HI
SATELLITE EARTH STATION

PREPARED BY
COMSEARCH
2002 EDMUND HALLEY DRIVE
RESTON, VIRGINIA 20191
November 15, 2000

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1. CONCLUSIONS

AN INTERFERENCE STUDY CONSIDERING ALL EXISTING, PROPOSED AND PRIOR COORDINATED MICROWAVE FACILITIES WITHIN THE COORDINATION CONTOURS OF THE PROPOSED EARTH STATION DEMONSTRATES THAT THIS SITE WILL OPERATE SATISFACTORILY WITH THE COMMON CARRIER MICROWAVE ENVIRONMENT. FURTHER, THERE WILL BE NO RESTRICTIONS OF ITS OPERATION DUE TO INTERFERENCE CONSIDERATIONS.

2. SUMMARY OF RESULTS

A NUMBER OF GREAT CIRCLE INTERFERENCE CASES WERE IDENTIFIED DURING THE INTERFERENCE STUDY OF THE PROPOSED EARTH STATION. EACH OF THE CASES WHICH EXCEEDED THE INTERFERENCE OBJECTIVE ON A LINE-OF-SIGHT BASIS WAS PROFILED AND THE PROPAGATION LOSSES ESTIMATED USING NBS TN101 (REVISED) TECHNIQUES. THE LOSSES WERE FOUND TO BE SUFFICIENT TO REDUCE THE SIGNAL LEVELS TO ACCEPTABLE MAGNITUDES IN EVERY CASE.

THE FOLLOWING COMPANIES REPORTED POTENTIAL GREAT CIRCLE INTERFERENCE CONFLICTS WHICH DID NOT MEET THE OBJECTIVES ON A LINE-OF-SIGHT BASIS. WHEN OVER-THE-HORIZON LOSSES ARE CONSIDERED ON THE INTERFERING PATHS, SUFFICIENT BLOCKAGE EXISTS TO NEGATE HARMFUL INTERFERENCE FROM OCCURRING WITH THE PROPOSED TRANSMIT AND RECEIVE EARTH STATION.

COMPANY

AT&T WIRELESS SERVICES OF HAWAII
VERISON HAWAII INC.

NO OTHER CARRIERS REPORTED POTENTIAL INTERFERENCE CASES.

3. SUPPLEMENTAL SHOWING
RE: PART 25.203 (C)

PURSUANT TO PART 25.203 (C) OF THE FCC RULES AND REGULATIONS,
THE SATELLITE EARTH STATION PROPOSED IN THIS APPLICATION
WAS COORDINATED BY COMSEARCH USING COMPUTER TECHNIQUES
AND IN ACCORDANCE WITH PART 25 OF THE FCC RULES AND
REGULATIONS.

COORDINATION DATA FOR THIS EARTH STATION WAS SENT TO THE
BELOW LISTED CARRIERS WITH A LETTER DATED OCTOBER 24, 2000.

AT&T CORP-GOVT MKTS HAWAII INF TRANSFER
AT&T WIRELESS SERVICES OF HAWAII, INC.
HAWAII ELECTRIC LIGHT CO INC
HAWAII STATE
UNIVERSITY OF HAWAII
VERIZON HAWAII INC.

4. EARTH STATION COORDINATION DATA

THIS SECTION PRESENTS THE DATA PERTINENT TO FREQUENCY COORDINATION OF THE PROPOSED EARTH STATION WHICH WAS CIRCULATED TO ALL COMMON CARRIERS WITHIN ITS COORDINATION CONTOURS.

SATELLITE EARTH STATION
FREQUENCY COORDINATION DATA

Company	ONSAT NETWORK COMMUNICATIONS, INC		
Owner code	ONSNET		
Earth Station Name, State	LAIE, HI		
Call Sign	LAIE		
Latitude (DMS) (NAD83)	21 38 40.0 N		
Longitude (DMS) (NAD83)	157 55 39.0 W		
Ground Elevation AMSL (Ft/m)	19.98 /	6.09	
Antenna Centerline AGL (Ft/m)	8.99 /	2.74	
Receive Antenna Type:	A4045B	ANDREW CORPORATION	
		ESA45-46	
4.0 GHz Gain (dBi) / Diameter (m)	43.9 /	4.5	
3 dB / 15 dB Half Beamwidth	0.60 /	1.20	
Transmit Antenna Type:	A6045B	ANDREW CORPORATION	
		ESA45-46	
6.0 GHz Gain (dBi) / Diameter (m)	46.2 /	4.5	
3 dB / 15 dB Half Beamwidth	0.47 /	0.95	
Operating Mode	TRANSMIT AND RECEIVE		
Modulation	ANALOG		
Emission / Receive Band (MHz)	520KG7D	6M00G7D /	3700.0000 - 3710.0000
	520KG7D	6M00G7D /	3740.0000 - 3960.0000
	520KG7D	6M00G7D /	4020.0000 - 4040.0000
	520KG7D	6M00G7D /	4190.0000 - 4200.0000
Emission / Transmit Band (MHz)	360KG7D	520KG7D /	5925.0000 - 5930.0000
	360KG7D	520KG7D /	6165.0000 - 6185.0000
	360KG7D	520KG7D /	6245.0000 - 6265.0000
	360KG7D	520KG7D /	6415.0000 - 6425.0000
Max. Available RF Power (dBW)/4 kHz)		-11.10	
(dBW)/MHz)		12.90	
Max. EIRP (dBW)/4 kHz)		35.10	
(dBW)/MHz)		59.10	
Max permissible Interference Power			
4.0 GHz, 20% (dBW/1 MHz)		-156.0	
4.0 GHz, 0.0100% (dBW/1 MHz)		-146.0	
6.0 GHz, 20% (dBW/4 kHz)		-154.0	
6.0 GHz, 0.0025% (dBW/4 kHz)		-131.0	
Range of Satellite Arc (Geostationary)			
Degrees Longitude		97.0 W /	101.0 W
Azimuth Range (Min/Max)		101.6 /	103.5
Corresponding Elevation Angles		18.6 /	22.4
Radio Climate		B	
Rain Zone		4	
Max Great Circle Coordination Distance (Mi/Km)			
4.0 GHz		255.3 /	411.0
6.0 GHz		91.0 /	146.5
Precipitation Scatter Contour Radius (Mi/Km)			
4.0 GHz		230.3 /	370.8
6.0 GHz		62.1 /	100.0

Table of Earth Station Coordination Values

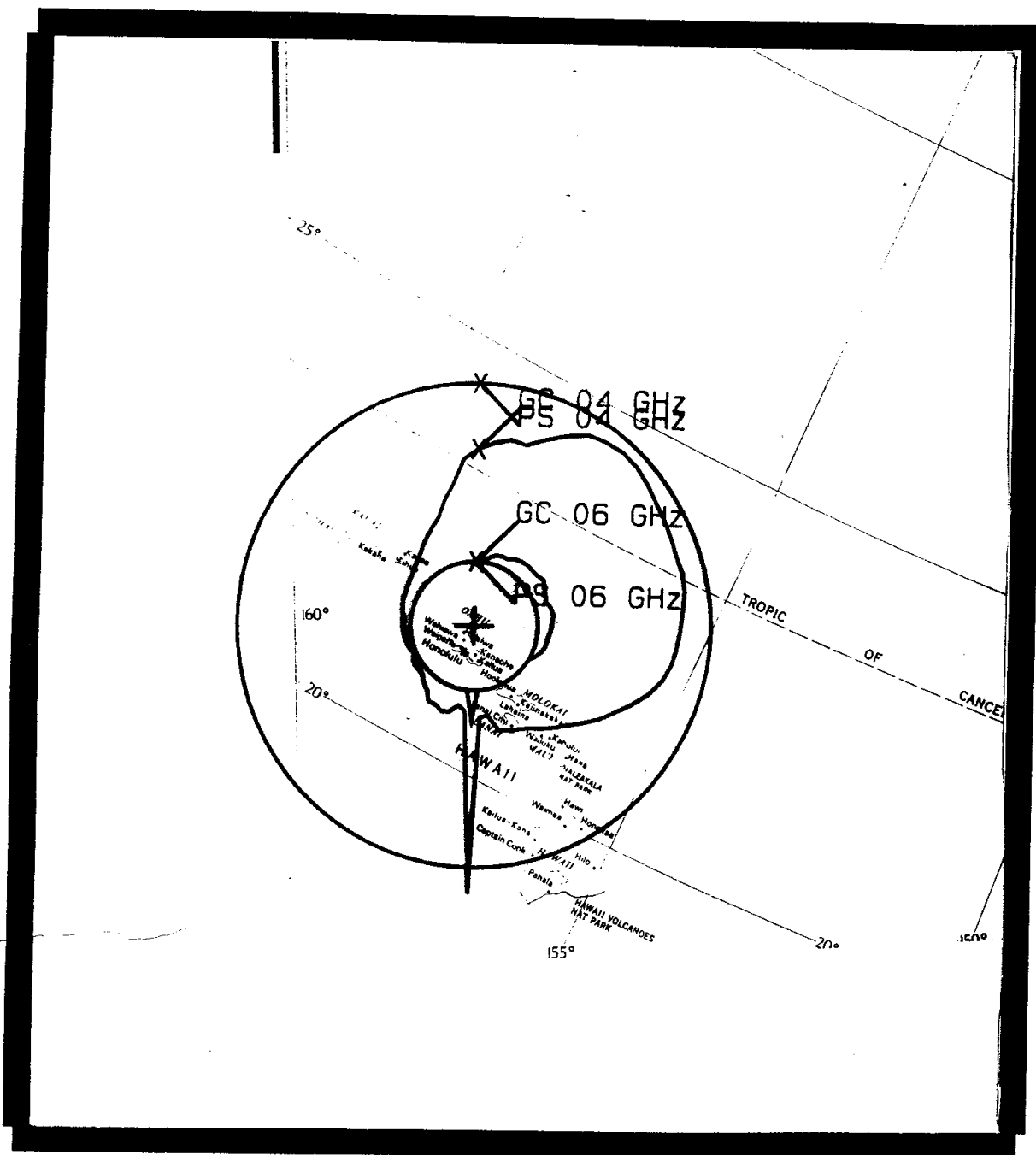
Earth Station Name LAIE HI
 Owner ONSAT NETWORK COMMUNICATIONS, INC
 Latitude (DMS) (NAD83) 21 38 40.0 N
 Longitude (DMS) (NAD83) 157 55 39.0 W
 Ground Elevation (Ft/m) 19.98 / 6.09 AMSL
 Antenna Centerline (Ft/m) 8.99 / 2.74 AGL
 Antenna Model ANDREW CORPORATION ESA45-46
 Objectives: Receive -156.0 (dBW /1 MHz)
 Transmit -154.0 (dBW /4 kHz) TX Power -11.1 (dBW/4 kHz)

Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	Antenna Gain (dBi)	4.0 GHz Coordination Distance (Km)	Antenna Gain (dBi)	6.0 GHz Coordination Distance (Km)
0	1.19	101.05	-6.10	270.1	-9.80	100.0
5	1.03	96.28	-6.10	280.9	-9.80	100.5
10	0.86	91.52	-7.49	289.7	-9.80	107.6
15	0.72	86.76	-10.10	287.1	-10.08	113.6
20	0.60	82.01	-10.10	305.2	-11.21	116.6
25	0.49	77.27	-10.10	323.4	-12.80	116.3
30	0.43	72.54	-10.10	340.9	-12.80	121.9
35	0.40	67.83	-10.10	347.6	-12.80	124.5
40	0.38	63.13	-10.10	351.8	-12.80	125.9
45	0.38	58.47	-10.10	351.1	-12.49	126.7
50	0.40	53.83	-10.10	347.0	-11.33	128.9
55	0.43	49.24	-9.95	341.7	-9.80	131.0
60	0.47	44.71	-9.04	339.2	-9.80	126.7
65	0.52	40.25	-8.15	336.2	-9.80	122.7
70	0.59	35.90	-6.46	342.6	-9.80	119.2
75	0.66	31.71	-5.44	339.8	-6.51	124.6
80	0.75	27.75	-4.65	334.0	-4.35	126.6
85	0.84	24.13	-3.75	327.9	-3.45	124.1
90	0.95	21.03	-2.51	323.5	-2.21	122.2
95	1.06	18.71	-1.59	319.6	-1.54	119.8
100	1.17	17.51	-1.11	315.8	-1.30	117.7
105	1.28	17.66	-1.16	307.1	-1.33	116.9
110	1.40	19.10	-1.74	292.9	-1.62	113.2
115	1.54	21.58	-2.73	275.1	-2.43	107.8
120	1.69	24.80	-4.02	257.0	-3.72	100.8
125	1.83	28.53	-4.81	243.2	-4.51	100.0
130	1.96	32.58	-5.62	230.2	-7.38	100.0
135	2.09	36.82	-6.83	215.9	-9.80	100.0
140	2.24	41.02	-8.30	200.6	-9.80	100.0
145	2.39	45.28	-9.16	190.0	-9.80	100.0
150	2.55	49.66	-10.03	179.3	-9.80	100.0
155	2.70	54.12	-10.10	173.6	-11.45	100.0
160	2.83	58.67	-10.10	169.6	-12.53	100.0
165	2.96	63.26	-10.10	165.3	-12.80	100.0
170	4.05	67.76	-10.10	139.5	-12.80	100.0
175	3.94	72.48	-10.10	141.2	-12.80	100.0
180	0.00	77.53	-10.10	410.9	-12.80	146.4

Table of Earth Station Coordination Values

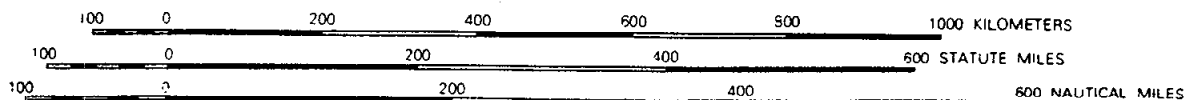
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Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	Antenna Gain (dBi)	4.0 GHz Coordination Distance (Km)	Antenna Gain (dBi)	6.0 GHz Coordination Distance (Km)
185	4.91	81.89	-10.10	131.9	-11.36	100.0
190	5.58	86.64	-10.10	124.8	-10.11	100.0
195	5.29	91.43	-7.45	137.8	-9.80	100.0
200	5.48	96.21	-6.10	141.0	-9.80	100.0
205	5.92	101.01	-6.10	135.7	-9.80	100.0
210	5.66	105.77	-6.72	136.3	-10.57	100.0
215	5.64	110.53	-10.42	123.2	-15.12	100.0
220	5.72	115.29	-13.22	115.6	-18.09	100.0
225	5.62	120.00	-15.10	110.8	-22.80	100.0
230	5.45	124.66	-16.03	109.6	-22.80	100.0
235	4.97	129.19	-16.94	111.1	-22.80	100.0
240	5.10	133.81	-17.86	107.3	-22.80	100.0
245	5.51	138.47	-18.79	100.8	-22.80	100.0
250	4.70	142.58	-19.10	106.6	-22.80	100.0
255	4.54	146.74	-19.10	107.7	-22.80	100.0
260	4.29	150.62	-19.10	109.4	-22.80	100.0
265	4.19	154.23	-19.10	110.1	-22.80	100.0
270	4.09	157.35	-19.10	110.8	-22.80	100.0
275	3.97	159.72	-19.10	111.9	-22.80	100.0
280	3.84	161.08	-19.01	114.2	-22.68	100.0
285	3.70	161.20	-19.10	116.3	-22.80	100.0
290	3.58	160.09	-19.10	118.2	-22.80	100.0
295	3.45	157.91	-19.10	118.5	-22.80	100.0
300	3.32	154.95	-19.10	120.8	-22.80	100.0
305	3.17	151.44	-19.10	123.3	-22.80	100.0
310	3.01	147.57	-19.10	126.3	-22.80	100.0
315	2.81	143.43	-19.10	130.9	-22.80	100.0
320	2.59	138.87	-18.87	136.8	-22.80	100.0
325	2.39	134.23	-17.95	145.7	-22.80	100.0
330	2.20	129.55	-17.01	155.1	-22.80	100.0
335	2.03	124.84	-16.07	164.7	-22.80	100.0
340	1.87	120.11	-15.12	176.0	-22.80	100.0
345	1.73	115.36	-13.24	193.1	-18.16	100.0
350	1.55	110.60	-10.46	219.4	-15.16	100.0
355	1.37	105.83	-6.76	255.8	-10.63	100.0



SCALE 1:10,000,000

1 INCH EQUALS 158 MILES



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2002 Edmund Halley Drive

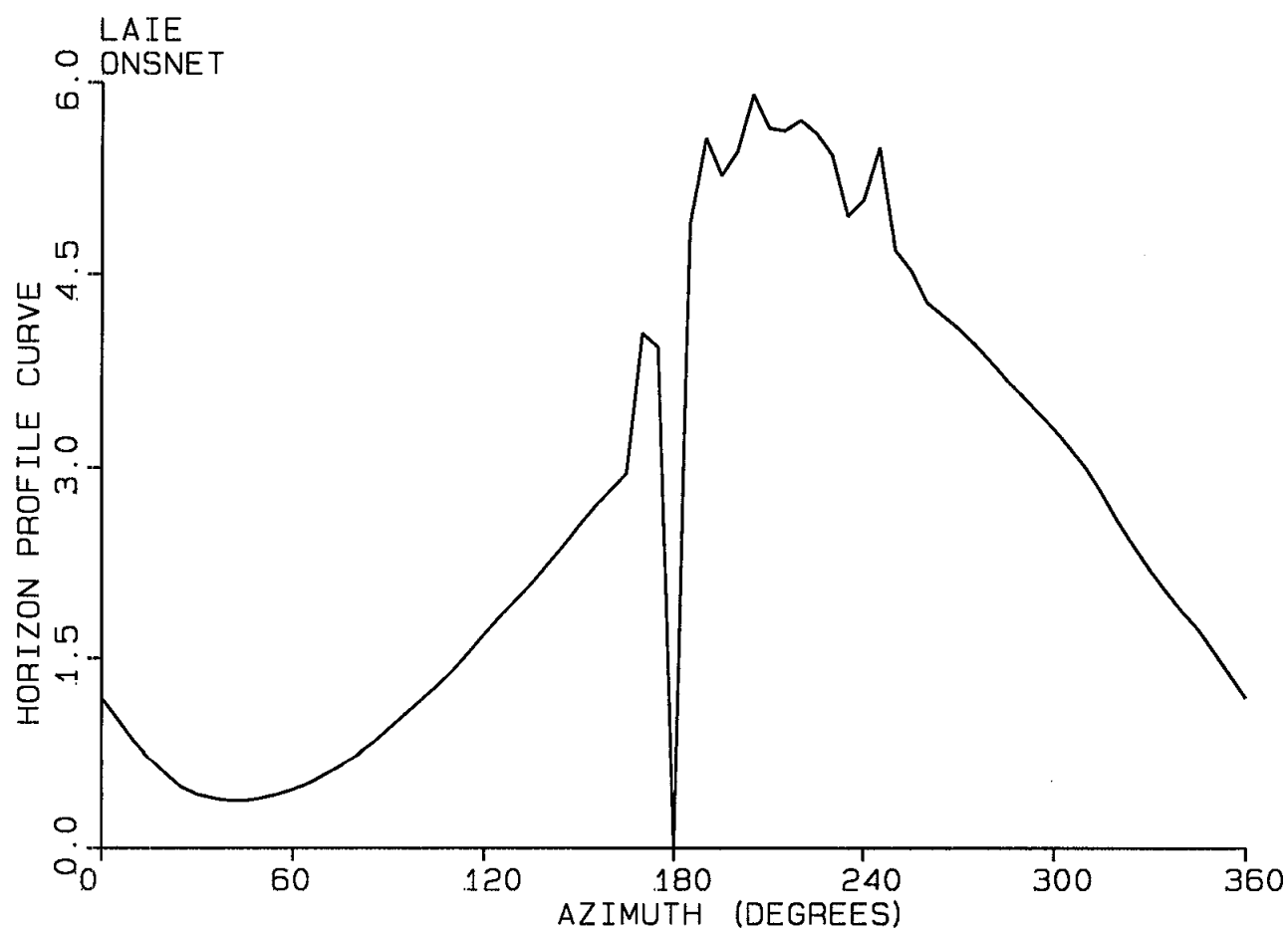
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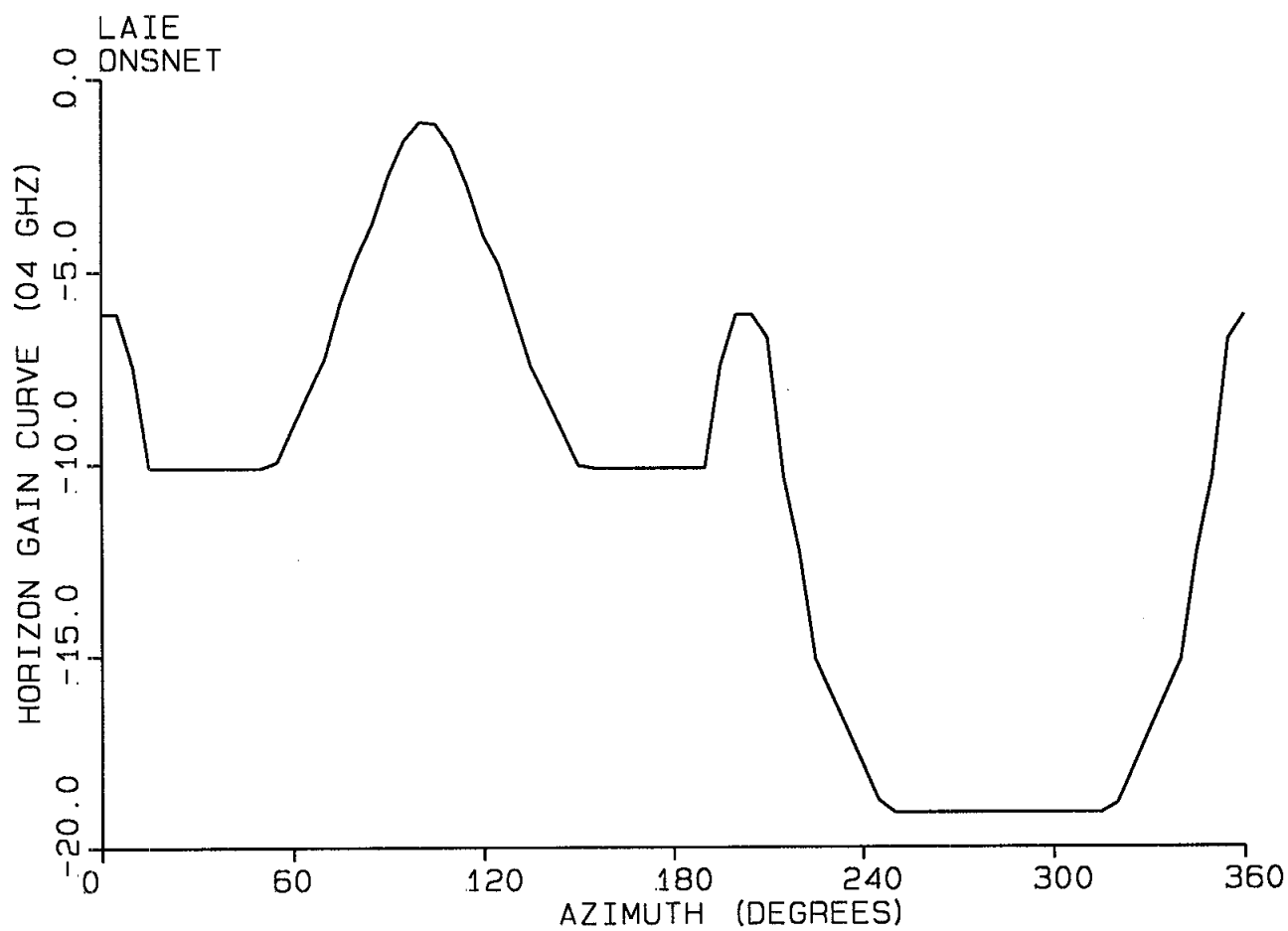
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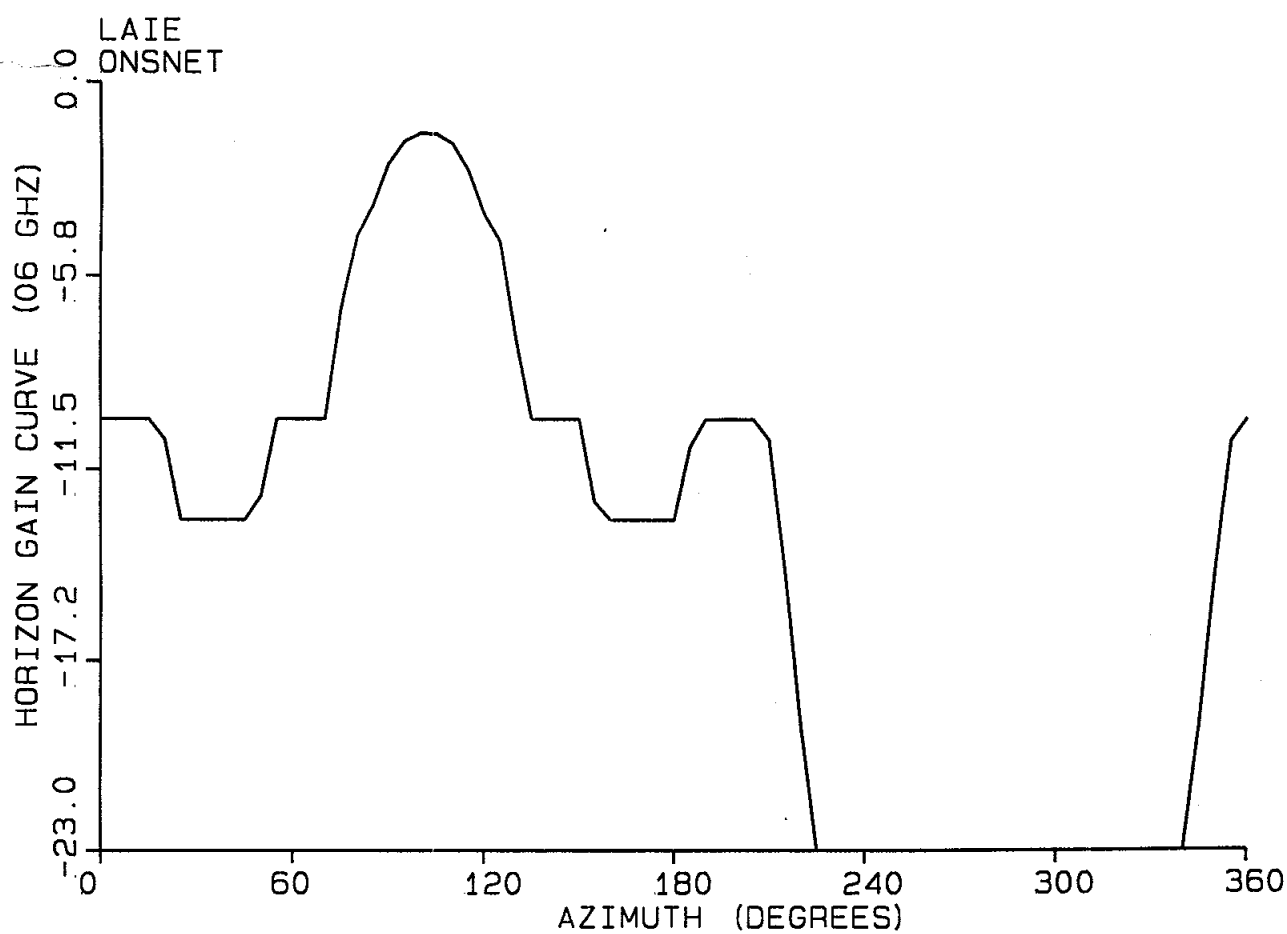
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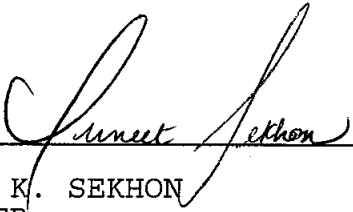




5. CERTIFICATION

I HEREBY CERTIFY THAT I AM THE TECHNICALLY QUALIFIED
PERSON RESPONSIBLE FOR THE PREPARATION OF THE FREQUENCY
COORDINATION DATA CONTAINED IN THIS APPLICATION,
THAT I AM FAMILIAR WITH PARTS 101 AND 25 OF THE FCC
RULES AND REGULATIONS, THAT I HAVE EITHER PREPARED
OR REVIEWED THE FREQUENCY COORDINATION DATA SUBMITTED
WITH THIS APPLICATION, AND THAT IT IS COMPLETE AND
CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: _____


PUNEET K. SEKHON
ENGINEER
COMSEARCH
2002 EDMUND HALLEY DRIVE
RESTON, VIRGINIA 20191

DATED: November 15, 2000