

FREQUENCY COORDINATION AND INTERFERENCE
ANALYSIS REPORT

PREPARED FOR
ONSAT NETWORK COMMUNICATIONS
BAKERSFIELD, CA
SATELLITE EARTH STATION

PREPARED BY
COMSEARCH
2002 EDMUND HALLEY DRIVE
RESTON, VIRGINIA 20191
October 23, 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 CALIFORNIA
FRESNO MSA LIMITED PARTNERSHIP

NO OTHER CARRIERS REPORTED POTENTIAL INTERFERENCE CASES.

3. SUPPLEMENTAL SHOWING
RE: PART 25.203(C)

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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 5, 2000.

AT&T COMMUNICATIONS
AT&T COMMUNICATIONS OF CALIFORNIA, INC.
AT&T WIRELESS SERVICES - FRESNO, CA
AT&T WIRELESS SERVICES - OXNARD, CA
AT&T WIRELESS SERVICES - TULARE
AT&T WIRELESS SERVICES - VISALIA, CA
AT&T WIRELESS SERVICES OF CALIFORNIA
BAKERSFIELD CELLULAR LLC
CALIFORNIA STATE
CNG COMMUNICATIONS, INC.
DUCOR TELEPHONE COMPANY
FRESNO MSA LIMITED PARTNERSHIP
GE AMERICAN COMMUNICATIONS, INC.
GLOBAL CROSSING TELECOMMUNICATIONS, INC.
GLOBECAST NORTH AMERICA INCORPORATED
GTE MOBILNET OF SANTA BARBARA LTD PARTNE
GTE WIRELESS OF CENTRAL CALIFORNIA INC.
KAISER FOUNDATION HEALTH PLAN
KERN COMMUNITY COLLEGE DISTRICT BAKERSFI
KERN COUNTY COMMUNICATIONS DIVISION
KERN COUNTY SUPERINTENDENT OF SCHOOLS
KERN ED TELECOM CONSORTIUM
LEGACY WORLDCOM
LOS ANGELES CITY COMMUNICATIONS SERVICES
LOS ANGELES COUNTY DEPT OF PUBLIC WORKS
LOS ANGELES COUNTY FCC LICENSING SECTION
LOS ANGELES SMSA LTD PARTNERSHIP
MCI WORLDCOM NETWORK SERVICES INC
MICROWAVE SERVICE COMPANY

OXNARD VENTURA SIMI LIMITED PARTNERSHIP
PACIFIC BELL PASADENA REGION
PACIFIC BELL SACRAMENTO REGION
PACIFIC GAS AND ELECTRIC COMPANY
SOUTHERN CALIFORNIA EDISON COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
TEXACO COMMUNICATIONS INC.
VERIZON CALIFORNIA INC.
Verestar
WESTERN STATES MICROWAVE TRANS CO
WESTERN UNION CORPORATION

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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
10/26/2000

Company	ONSAT NETWORK COMMUNICATIONS, INC	
Owner code	ONSNET	
Earth Station Name, State	BAKERSFIELD, CA	
Call Sign	BAKERSFI	
Latitude (DMS) (NAD83)	35 18 54.9 N	
Longitude (DMS) (NAD83)	119 4 30.4 W	
Ground Elevation AMSL (Ft/m)	361.89 /	110.30
Antenna Centerline AGL (Ft/m)	8.99 /	2.74

Receive Antenna Type:	FCC32	FCC Reference
		32-25LOG(THETA)
4.0 GHz Gain (dBi) / Diameter (m)		40.9 / 3.7
3 dB / 15 dB Half Beamwidth		0.70 / 1.20

Transmit Antenna Type:	FCC32	FCC Reference
		32-25LOG(THETA)
6.0 GHz Gain (dBi) / Diameter (m)		44.7 / 3.7
3 dB / 15 dB Half Beamwidth		0.55 / 1.10

Operating Mode	TRANSMIT AND RECEIVE			
Modulation	ANALOG			
Emission / Receive Band (MHz)	520KG7D	6M00G7D /	3700.0000 -	3710.0000
	520KG7D	6M00G7D /	3940.0000 -	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)	-13.40
(dBW)/MHz)	10.60

Max. EIRP (dBW)/4 kHz)	31.30
(dBW)/MHz)	55.30

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)	145.0 / 150.6
Corresponding Elevation Angles	42.8 / 44.7

Radio Climate	A
Rain Zone	4

Max Great Circle Coordination Distance (Mi/Km)

4.0 GHz	182.2 /	293.2
6.0 GHz	84.9 /	136.6

Precipitation Scatter Contour Radius (Mi/Km)

4.0 GHz	62.1 /	100.0
6.0 GHz	62.1 /	100.0

Table of Earth Station Coordination Values

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Earth Station Name BAKERSFIELD CA
 Owner ONSAT NETWORK COMMUNICATIONS, INC
 Latitude (DMS) (NAD83) 35 18 54.9 N
 Longitude (DMS) (NAD83) 119 4 30.4 W
 Ground Elevation (Ft/m) 361.89 / 110.30 AMSL
 Antenna Centerline (Ft/m) 8.99 / 2.74 AGL
 Antenna Model Prodelin 1374 - 370
 Objectives: Receive -156.0 (dBW /1 MHz)
 Transmit -154.0 (dBW /4 kHz) TX Power -13.4 (dBW/4 kHz)

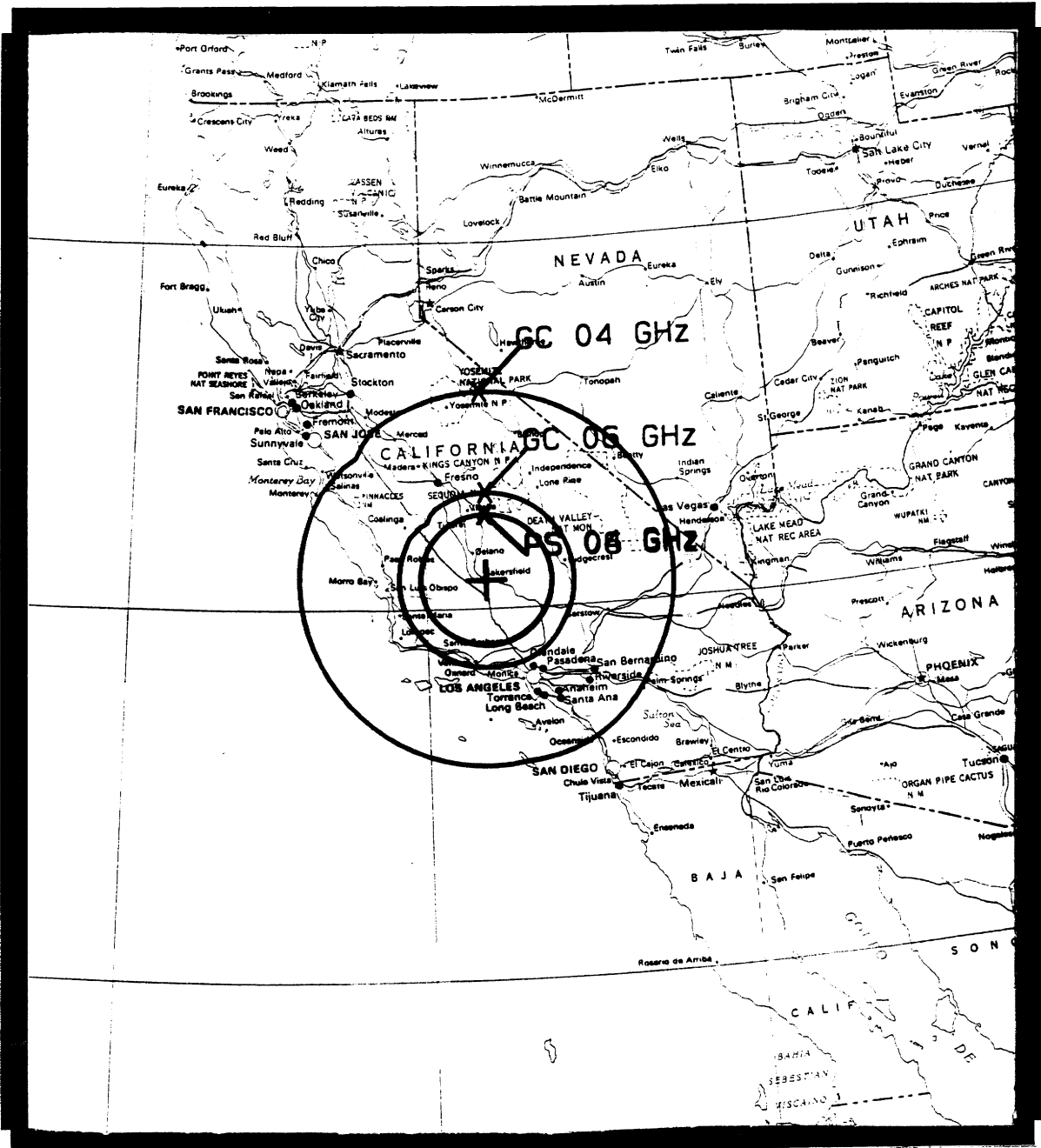
Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Gain (dBi)	4.0 GHz Coordination Distance (Km)	Antenna Gain (dBi)	6.0 GHz Coordination Distance (Km)
0	0.00	-10.00	285.2	-10.00	133.2
5	0.00	-10.00	285.2	-10.00	133.2
10	0.00	-10.00	285.2	-10.00	133.2
15	0.00	-10.00	285.2	-10.00	133.2
20	0.00	-10.00	285.2	-10.00	133.2
25	0.00	-10.00	285.2	-10.00	133.2
30	0.00	-10.00	285.2	-10.00	133.2
35	0.00	-10.00	285.2	-10.00	133.2
40	0.00	-10.00	285.2	-10.00	133.2
45	0.00	-10.00	285.2	-10.00	133.2
50	0.00	-10.00	285.2	-10.00	133.2
55	0.00	-10.00	285.2	-10.00	133.2
60	0.00	-10.00	285.2	-10.00	133.2
65	0.00	-10.00	285.2	-10.00	133.2
70	0.00	-10.00	285.2	-10.00	133.2
75	0.00	-10.00	285.2	-10.00	133.2
80	0.00	-10.00	285.2	-10.00	133.2
85	0.00	-10.00	285.2	-10.00	133.2
90	0.00	-10.00	285.2	-10.00	133.2
95	0.00	-10.00	285.2	-10.00	133.2
100	0.00	-10.00	285.2	-10.00	133.2
105	0.00	-10.00	285.2	-10.00	133.2
110	0.00	-10.00	285.2	-10.00	133.2
115	0.00	-10.00	285.2	-10.00	133.2
120	0.00	-10.00	285.2	-10.00	133.2
125	0.00	-9.65	287.5	-9.65	134.1
130	0.00	-9.28	289.8	-9.28	135.1
135	0.00	-9.01	291.6	-9.01	135.9
140	0.00	-8.83	292.8	-8.83	136.4
145	0.00	-8.77	293.2	-8.77	136.6
150	0.00	-8.83	292.8	-8.83	136.4
155	0.00	-9.01	291.6	-9.01	135.9
160	0.00	-9.29	289.8	-9.29	135.1
165	0.00	-9.66	287.4	-9.66	134.1
170	0.00	-10.00	285.2	-10.00	133.2
175	0.00	-10.00	285.2	-10.00	133.2
180	0.00	-10.00	285.2	-10.00	133.2

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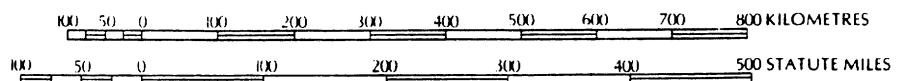
Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Gain (dBi)	4.0 GHz Coordination Distance (Km)	Antenna Gain (dBi)	6.0 GHz Coordination Distance (Km)
185	0.00	-10.00	285.2	-10.00	133.2
190	0.00	-10.00	285.2	-10.00	133.2
195	0.00	-10.00	285.2	-10.00	133.2
200	0.00	-10.00	285.2	-10.00	133.2
205	0.00	-10.00	285.2	-10.00	133.2
210	0.00	-10.00	285.2	-10.00	133.2
215	0.00	-10.00	285.2	-10.00	133.2
220	0.00	-10.00	285.2	-10.00	133.2
225	0.00	-10.00	285.2	-10.00	133.2
230	0.00	-10.00	285.2	-10.00	133.2
235	0.00	-10.00	285.2	-10.00	133.2
240	0.00	-10.00	285.2	-10.00	133.2
245	0.00	-10.00	285.2	-10.00	133.2
250	0.00	-10.00	285.2	-10.00	133.2
255	0.00	-10.00	285.2	-10.00	133.2
260	0.00	-10.00	285.2	-10.00	133.2
265	0.00	-10.00	285.2	-10.00	133.2
270	0.00	-10.00	285.2	-10.00	133.2
275	0.00	-10.00	285.2	-10.00	133.2
280	0.00	-10.00	285.2	-10.00	133.2
285	0.00	-10.00	285.2	-10.00	133.2
290	0.00	-10.00	285.2	-10.00	133.2
295	0.00	-10.00	285.2	-10.00	133.2
300	0.21	-10.00	284.5	-10.00	133.9
305	0.24	-10.00	279.8	-10.00	130.8
310	0.26	-10.00	277.6	-10.00	129.4
315	0.31	-10.00	271.2	-10.00	125.1
320	0.25	-10.00	279.4	-10.00	130.6
325	0.00	-10.00	285.2	-10.00	133.2
330	0.00	-10.00	285.2	-10.00	133.2
335	0.00	-10.00	285.2	-10.00	133.2
340	0.00	-10.00	285.2	-10.00	133.2
345	0.00	-10.00	285.2	-10.00	133.2
350	0.00	-10.00	285.2	-10.00	133.2
355	0.00	-10.00	285.2	-10.00	133.2

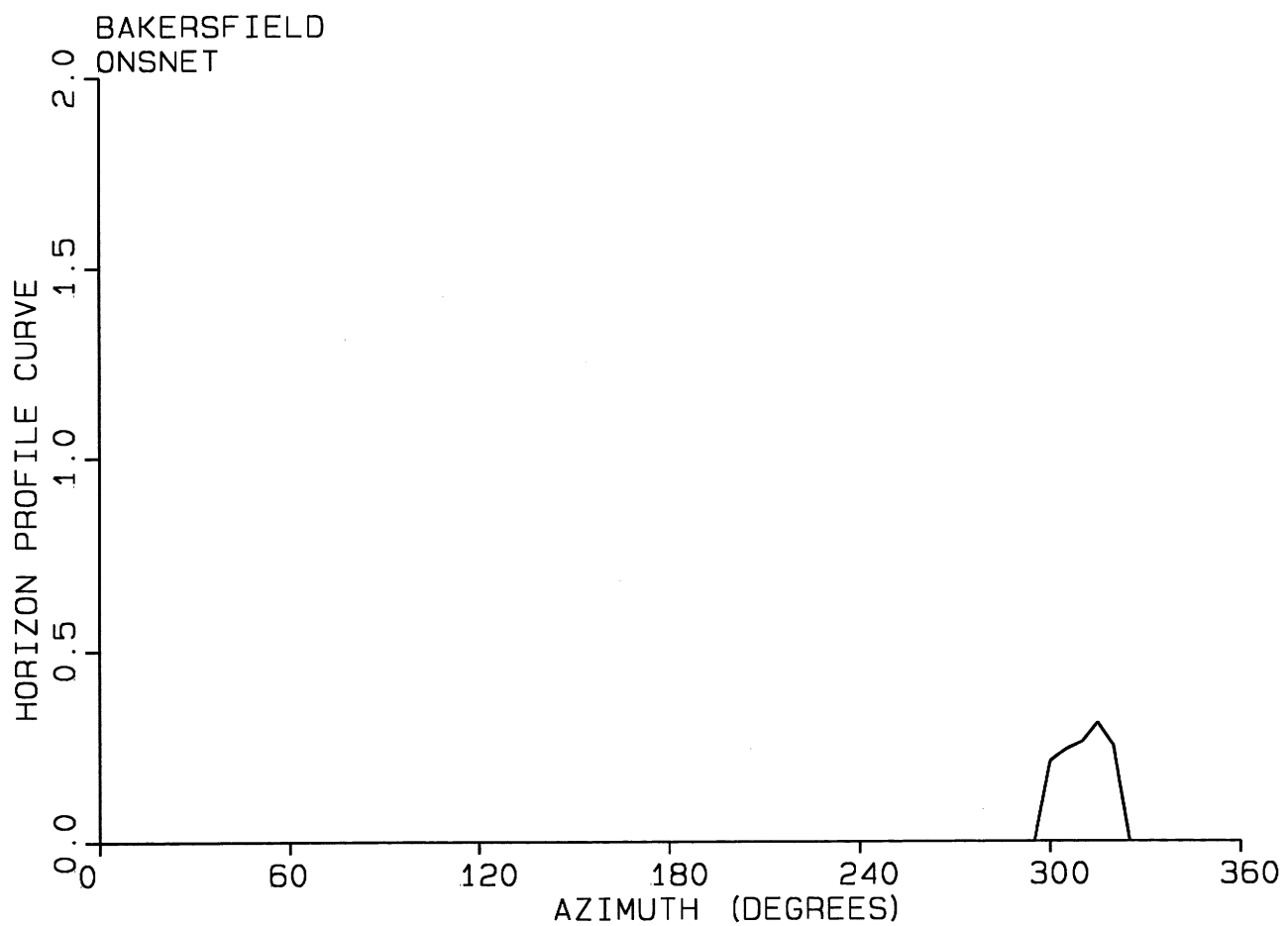


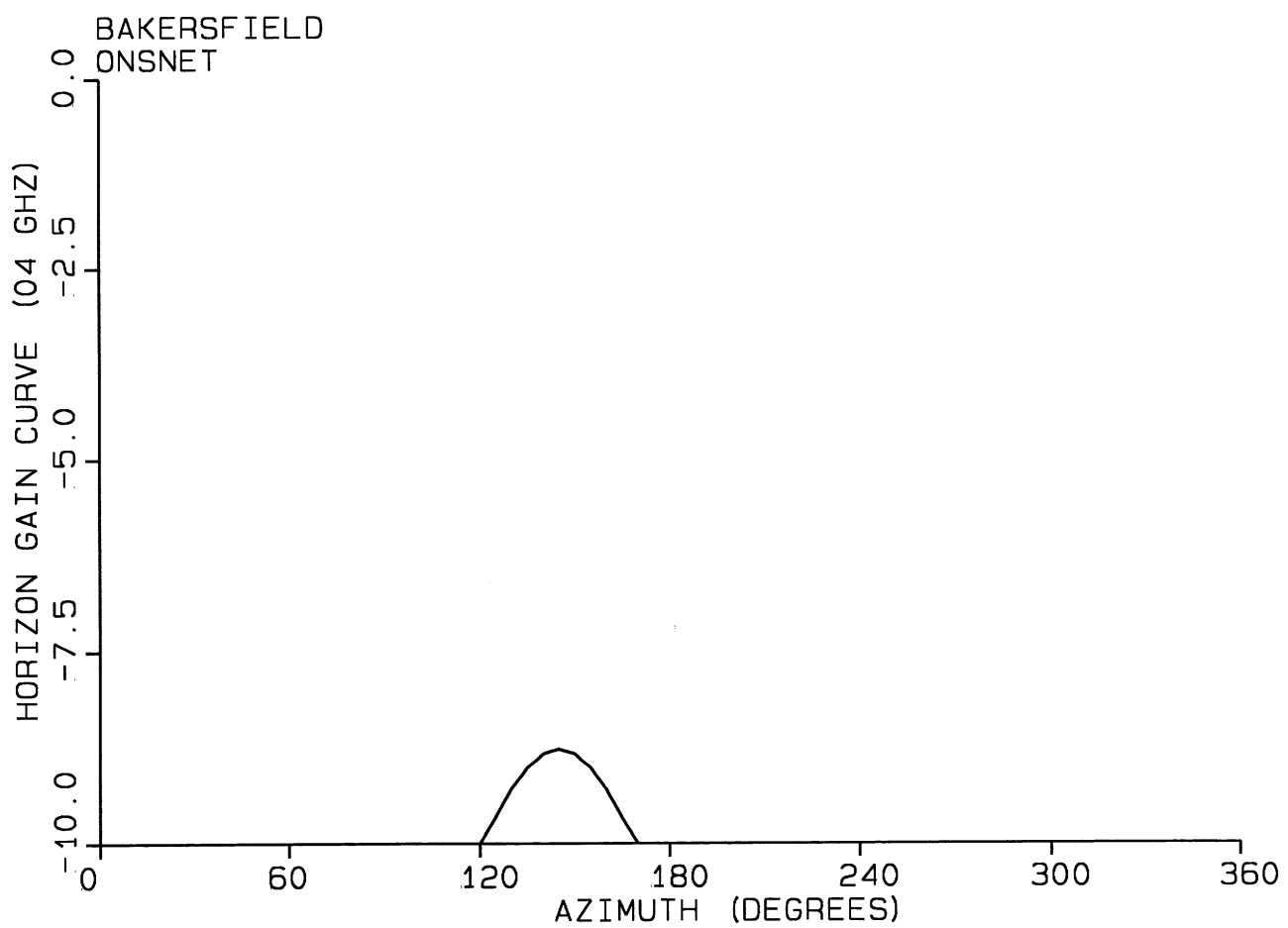
COMSEARCH
Leadership and Diversity for Wireless

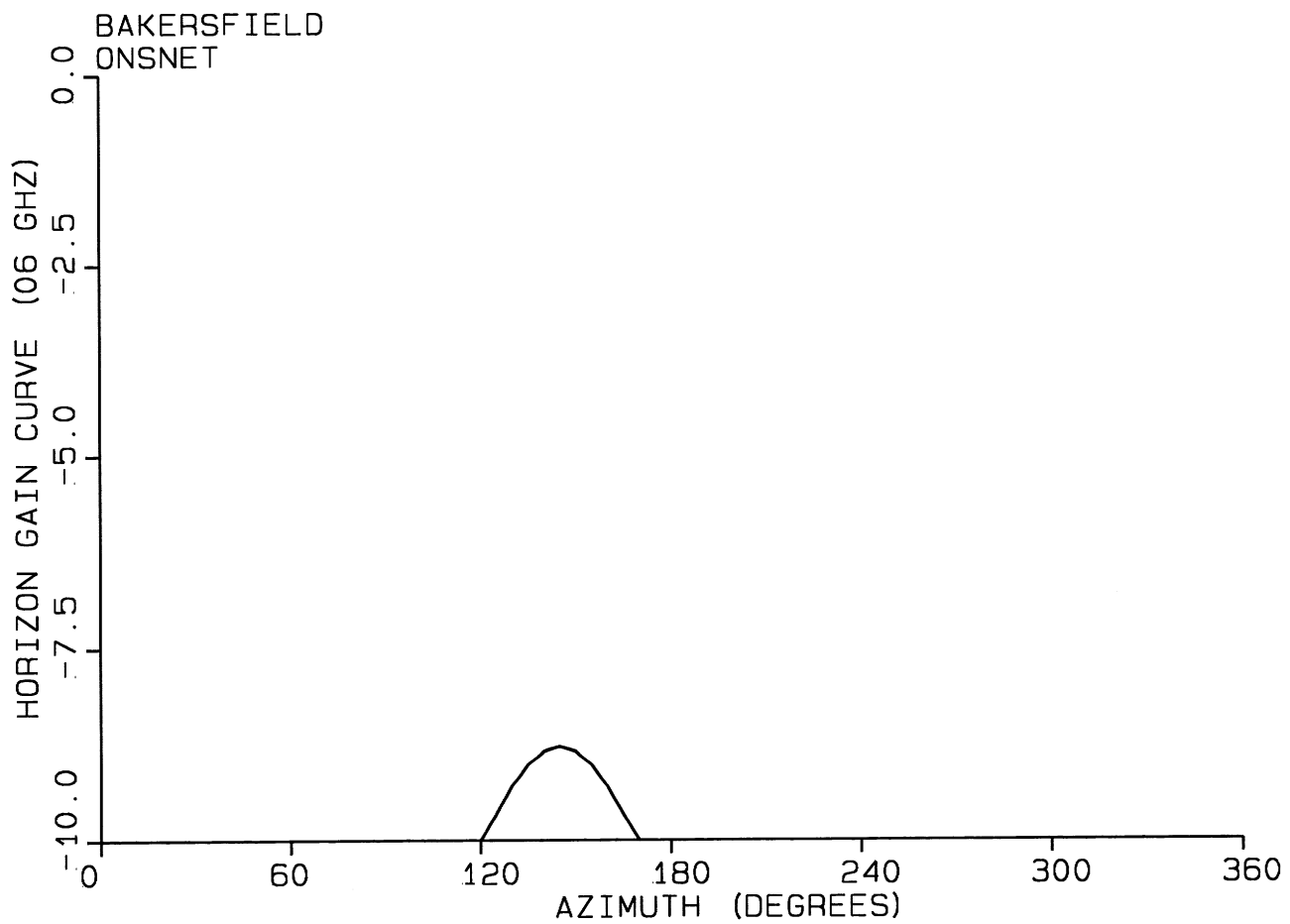
2002 Edmund Halley Drive
Reston, Virginia 20191
USA
TEL 703.620.6300
FAX 703.476.2697

SCALE 1:10,000,000
ONE INCH EQUALS APPROXIMATELY 158 MILES
ONE CENTIMETRE EQUALS 100 KILOMETRES





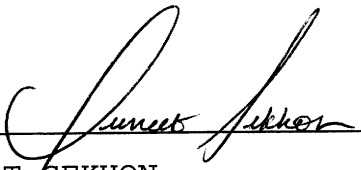




5. CERTIFICATION

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 SEKHON
ENGINEER
COMSEARCH
2002 EDMUND HALLEY DRIVE
RESTON, VIRGINIA 20191

DATED: October 23, 2000