

FREQUENCY COORDINATION AND INTERFERENCE
ANALYSIS REPORT

PREPARED FOR

BT AMERICAS INC.
MARINA DEL REY, CALIFORNIA

SATELLITE EARTH STATION

PREPARED BY
COMSEARCH

19700 JANELIA FARM BOULEVARD
ASHBURN, VIRGINIA 20147
FEBRUARY 10, 2003

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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, BASED UPON THE RESTRICTIONS NOTED IN THE SUMMARY OF RESULTS (SECTION 2).

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 MOST CASES.

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 AND FREQUENCY SEPARATION ARE CONSIDERED ON THE INTERFERING PATHS SUFFICIENT LOSSES EXIST TO NEGATE HARMFUL INTERFERENCE FROM OCCURRING WITH THE PROPOSED TRANSMIT AND RECEIVE EARTH STATION. FURTHER, THE TRANSMIT SPECTRUM WILL BE LIMITED TO FREQUENCIES 5940.0 TO 6009.0 MHZ, 6060.0 TO 6152.0 MHZ, AND 6183.0 TO 6425.0 MHZ.

COMPANY

AT&T WIRELESS SERVICES OF FLA - SAN DIEGO
ARCH WIRELESS LICENSE COMPANY, LLC
LOS ANGELES SMSA LTD PARTNERSHIP
SOUTHERN CALIFORNIA GAS COMPANY

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.

EXPEDITED COORDINATION DATA FOR THIS EARTH STATION WAS FAXED TO
THE BELOW LISTED CARRIERS WITH A LETTER DATED JANUARY 27, 2003.

AB CELULLAR LA, LLC
ARCH WIRELESS LICENSE CO., LLC
AT&T WIRELESS SER OF FL - SOUTHERN CALIF
AT&T WIRELESS SERVICES OF FL - San Diego
CALIFORNIA, STATE OF
CARITAS TELECOMMUNICATIONS
CNG COMMUNICATIONS, INC.
COAST COMMUNITY COLLEGE DISTRICT
FRESNO MSA LIMITED PARTNERSHIP
GLOBECAST NORTH AMERICA INCORPORATED
GTE MOBILNET OF SANTA BARBARA LTD PARTNE
KERN COUNTY CALIFORNIA
KERN ED TELECOM CONSORTIUM
LB Tower Company LLC
LOS ANGELES CITY COMMUNICATIONS SERVICES
LOS ANGELES COUNTY DEPT OF PUBLIC WORKS
LOS ANGELES COUNTY FCC LICENSING SECTION
LOS ANGELES SMSA LTD. PARTNERSHIP
METROPOLITAN WATER DIST OF SO CALIFORNIA
MICROWAVE SERVICE COMPANY
MUT LICENSING INC
NEXTEL OF CALIFORNIA INC
ORANGE COUNTY GSA COMMUNICATIONS DIV
OXNARD VENTURA SIMI LIMITED PARTNERSHIP
PACIFIC BELL PASADENA REGION
QWEST COMMUNICATIONS INTERNATIONAL INC.
RIVERSIDE COUNTY OF
RIVERSIDE TELEPORT CORPORATION
SAN BERNARDINO COUNTY OF CALIFORNIA

SAN DIEGO COUNTY
SOUTHERN CALIFORNIA EDISON COMPANY
SOUTHERN CALIFORNIA GAS COMPANY
SOUTHWESTERN BELL MOBILE SYS LLC - CA NV
TV MICROWAVES CO
UNION PACIFIC RAILROAD COMPANY
VERESTAR, INC
VERIZON CALIFORNIA INC.
VERIZON WIRELESS (VAW) LLC (CA)
WINSTAR WIRELESS FIBER CORPORATION
Western Technical Services

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 COOR-
DINATION CONTOURS.

SATELLITE EARTH STATION
FREQUENCY COORDINATION DATA
01/24/2003

Company	BT AMERICAS INC.	
Earth Station Name, State	MARINA DEL REY, CA	
Call Sign	E000622	
Latitude (DMS) (NAD83)	33 58 55.0 N	
Longitude (DMS) (NAD83)	118 25 38.3 W	
Ground Elevation AMSL (Ft/m)	15.03 /	4.58
Antenna Centerline AGL (Ft/m)	49.67 /	15.14
Receive Antenna Type:	VERTEX COMMUNICATIONS	
	7.2 KXC	
4.0 GHz Gain (dBi) / Diameter (m)	47.8 /	7.2
3 dB / 15 dB Half Beamwidth	0.37 /	0.74
Transmit Antenna Type:	VERTEX COMMUNICATIONS	
	7.2 KXC	
6.0 GHz Gain (dBi) / Diameter (m)	51.2 /	7.2
3 dB / 15 dB Half Beamwidth	0.24 /	0.49
Operating Mode	TRANSMIT AND RECEIVE	
Modulation	ANALOG & DIGITAL	
Emission / Receive Band (MHz)	36M0F8W, 6M76G7W, 12M8G7W / 3700.0000 - 4200.0000	
Emission / Transmit Band (MHz)	36M0F8W, 6M76G7W, 12M8G7W / 5940.0000 - 6009.0000	
	36M0F8W, 6M76G7W, 12M8G7W / 6060.0000 - 6152.0000	
	36M0F8W, 6M76G7W, 12M8G7W / 6183.0000 - 6425.0000	
Max. Available RF Power (dBW)/4 kHz	-14.50	
(dBW)/MHz	9.50	
Max. EIRP	(dBW)/4 kHz 36.70	
	(dBW)/MHz 60.70	
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 50.0 W / 191.0 W	
Azimuth Range (Min/Max)	102.5 / 260.0	
Corresponding Elevation Angles	9.2 / 5.7	
Radio Climate	B	
Rain Zone	4	
Max Great Circle Coordination Distance (Mi/Km)	4.0 GHz 505.9 / 814.3	
	6.0 GHz 168.9 / 271.8	
Precipitation Scatter Contour Radius (Mi/Km)	4.0 GHz 384.4 / 618.7	
	6.0 GHz 62.1 / 100.0	

Table of Earth Station Coordination Values
01/24/2003

Earth Station Name MARINA DEL REY CA
Owner BT AMERICAS INC.
Latitude (DMS) (NAD83) 33 58 55.0 N
Longitude (DMS) (NAD83) 118 25 38.3 W
Ground Elevation (Ft/m) 15.03 / 4.58 AMSL
Antenna Centerline (Ft/m) 49.67 / 15.14 AGL
Antenna Model VERTEX COMMUNICATIONS 7.2 KXC
Objectives: Receive -156.0 (dBW /1 MHz)
 Transmit -154.0 (dBW /4 kHz) TX Power -14.5 (dBW/4 kHz)

Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	4.0 GHz		6.0 GHz	
			Antenna Gain (dBi)	Coordination Distance (Km)	Antenna Gain (dBi)	Coordination Distance (Km)
0	0.38	99.91	-10.00	354.8	-10.00	124.7
5	0.37	97.38	-10.00	355.7	-10.00	125.0
10	0.44	92.44	-10.00	338.4	-10.00	119.1
15	0.43	87.49	-10.00	341.9	-10.00	120.1
20	0.45	82.55	-10.00	334.2	-10.00	117.8
25	0.38	77.61	-10.00	353.1	-10.00	124.2
30	0.22	72.68	-10.00	405.1	-10.00	141.6
35	0.00	67.77	-10.00	412.2	-10.00	144.1
40	0.00	62.84	-10.00	412.2	-10.00	144.1
45	0.59	57.87	-10.00	307.0	-10.00	111.3
50	0.93	52.92	-10.00	261.1	-10.00	100.0
55	0.99	48.00	-10.00	254.4	-10.00	100.0
60	1.14	43.07	-8.86	253.7	-8.86	100.0
65	1.07	38.20	-7.55	266.5	-7.55	100.0
70	1.04	33.36	-6.08	280.6	-6.08	101.1
75	0.94	28.58	-4.40	306.0	-4.40	109.1
80	0.79	23.90	-2.46	348.2	-2.46	119.8
85	0.62	19.38	-0.19	406.3	-0.19	137.4
90	0.36	15.22	2.44	523.8	2.44	176.9
95	0.31	11.56	5.43	597.4	5.43	201.9
100	0.37	9.13	7.99	613.6	7.99	210.7
105	0.58	8.95	8.20	535.4	8.20	177.8
110	0.69	11.32	5.65	468.1	5.65	155.6
115	0.62	15.12	2.51	441.0	2.51	147.8
120	0.68	19.02	0.02	396.9	0.02	134.3
125	0.71	22.86	-1.98	367.0	-1.98	125.4
130	0.68	26.64	-3.64	354.2	-3.64	122.1
135	0.67	30.28	-5.03	342.6	-5.03	118.6
140	0.69	33.75	-6.21	327.7	-6.21	116.4
145	0.66	37.06	-7.22	323.2	-7.22	115.4
150	0.75	40.04	-8.06	301.8	-8.06	109.0
155	0.85	42.71	-8.76	281.5	-8.76	102.4
160	0.84	45.09	-9.35	277.5	-9.35	101.2
165	0.56	47.28	-9.87	313.3	-9.87	113.2
170	0.57	48.73	-10.00	311.1	-10.00	112.6
175	0.64	49.56	-10.00	300.5	-10.00	109.2
180	0.66	49.84	-10.00	297.7	-10.00	108.3

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Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	4.0 GHz		6.0 GHz	
			Antenna Gain (dBi)	Coordination Distance (Km)	Antenna Gain (dBi)	Coordination Distance (Km)
185	0.55	49.65	-10.00	314.4	-10.00	113.6
190	0.70	48.60	-10.00	291.4	-10.00	106.2
195	0.58	47.26	-9.86	309.7	-9.86	112.1
200	0.46	45.40	-9.43	336.8	-9.43	118.4
205	0.32	43.11	-8.86	384.6	-8.86	134.1
210	0.38	40.31	-8.13	373.7	-8.13	130.2
215	0.00	37.52	-7.36	446.3	-7.36	154.7
220	0.00	34.21	-6.35	460.0	-6.35	159.0
225	0.00	30.72	-5.19	475.9	-5.19	164.3
230	0.00	27.07	-3.81	496.0	-3.81	170.7
235	0.00	23.30	-2.18	521.0	-2.18	178.8
240	0.00	19.44	-0.22	552.8	-0.22	189.2
245	0.00	15.49	2.25	595.1	2.25	203.3
250	0.00	11.48	5.50	654.5	5.50	222.7
255	0.00	7.63	9.94	745.0	9.94	251.5
260	0.00	5.72	13.06	814.2	13.06	271.8
265	0.00	7.56	10.03	746.8	10.03	252.0
270	0.00	11.47	5.51	654.8	5.51	222.8
275	0.00	15.99	1.90	589.1	1.90	201.3
280	0.00	20.73	-0.91	541.4	-0.91	185.4
285	0.00	25.56	-3.19	505.5	-3.19	173.8
290	0.00	30.45	-5.09	477.3	-5.09	164.7
295	0.00	35.36	-6.71	455.1	-6.71	157.4
300	0.00	40.29	-8.13	436.0	-8.13	151.4
305	0.00	45.24	-9.39	419.8	-9.39	146.5
310	0.24	50.17	-10.00	399.7	-10.00	139.8
315	0.29	55.13	-10.00	382.0	-10.00	133.7
320	0.32	60.10	-10.00	370.6	-10.00	129.9
325	0.34	65.07	-10.00	365.6	-10.00	128.3
330	0.37	70.04	-10.00	355.7	-10.00	125.0
335	0.41	75.02	-10.00	345.9	-10.00	121.9
340	0.53	80.00	-10.00	316.1	-10.00	114.2
345	0.63	84.97	-10.00	302.3	-10.00	109.8
350	0.44	89.95	-10.00	339.0	-10.00	119.2
355	0.46	94.93	-10.00	331.3	-10.00	116.9

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.



JEFFREY E. COWLES
SENIOR FREQUENCY COORDINATOR
COMSEARCH
19700 JANELIA FARM BOULEVARD
ASHBURN, VIRGINIA 20147

DATED: February 10, 2003

