

FREQUENCY COORDINATION AND INTERFERENCE
ANALYSIS REPORT

PREPARED FOR

TELENOR SATELLITE SERVICES
SOUTHBURY, CONNECTICUT

SATELLITE EARTH STATION
CALL SIGN: KA312

PREPARED BY
COMSEARCH
19700 JANELIA FARM BOULEVARD
ASHBURN, VIRGINIA 20147
SEPTEMBER 18, 2002

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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

CELLCO PARTNERSHIP - CT, W-MA
COMCAST CABLE COMMUNICATIONS (EASTERN)
ACC NEW YORK LICENSE II LLC
DUTCHESS COUNTY CELLULAR TELEPHONE COMPANY
ORANGE POUGHKEEPSIE SMSA LTD PARTNERSHIP

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 JULY 30, 2002.

ACC NEW YORK LICENSE I LLC
ACC NEW YORK LICENSE II LLC
ACC NEW YORK LICENSE III LLC
ALBANY TELEPHONE COMPANY
AMERICAN CELLULAR NETWORK COMPANY LLC
AT&T COMMUNICATIONS OF PENNSYLVANIA, INC
AT&T CORP.
AT&T WIRELESS SERVICES - NY/NJ
AT&T Wireless Services of FL - East Reg
CELLCO PARTNERSHIP - (W-NY)
CELLCO PARTNERSHIP - CT, W-MA
CELLCO PARTNERSHIP - Newark-Dallas Route
CELLCO PARTNERSHIP- E-MA, NH, RI
CELLCO PARTNERSHIP- PA REGION
COMCAST CABLE COMMUNICATIONS (EASTERN)
CONNECTICUT STATE POLICE DEPARTMENT
CONSOLIDATED EDISON COMPANY OF NEW YORK
DIRECT BROADCAST SERVICES, INC.
DIRECT CONNECT EQUIPMENT, INC.
DUTCHESS COUNTY CELLULAR TELEPHONE CO
EQUAL ACCESS NETWORKS LLC
FELHC, Inc.
GLOBAL CROSSING NORTH AMERICA, INC.
GWNS ACQUISITION SUB, INC
INTERMEDIA COMMUNICATIONS, INC.
MCI WORLDCOM NETWORK SERVICES INC
Massachusetts, Commonwealth Public Works
NATIONAL BROADCASTING COMPANY INC
NEW ENGLAND TELEPHONE & TELEGRAPH CO

NEW YORK CELLULAR GEOGRAPHIC SRVC AREA
NEW YORK DIVISION OF STATE POLICE
NORTHEAST PENNSYLVANIA SMSA LTD PRTRSH
NYNEX MOBILE LIMITED PARTNERSHIP 2
ORANGE POUGHKEEPSIE SMSA LTD PARTNERSHIP
PENN SERVICE MICROWAVE CO. INC.
PENNSYLVANIA CELLULAR TELEPHONE CORP.
RCC ATLANTIC, INC.
SBA BROADBAND SERVICES, INC.
SES AMERICOM, INC.
SNET MOBILITY, LLC
SOUTHWESTERN BELL MOBILE SYSTEMS LLC, MA
SUFFOLK, COUNTY OF, POLICE DEPARTMENT
VERESTAR, INC
VERIZON NY
WORCESTER TELEPHONE COMPANY

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
07/12/2002

Company	TELENOR SATELLITE SERVICES	
Earth Station Name, State	SOUTHBURY, CT	
Call Sign	KA312	
Latitude (DMS) (NAD83)	41 27 6.3 N	
Longitude (DMS) (NAD83)	73 17 21.4 W	
Ground Elevation AMSL (Ft/m)	120.0 / 36.58	
Antenna Centerline AGL (Ft/m)	22.0 / 6.71	
Receive Antenna Type:	SCIENTIFIC-ATLANTA 8007	
4.0 GHz Gain (dBi) / Diameter (m)	51.5 / 11.0	
3 dB / 15 dB Half Beamwidth	0.20 / 0.40	
Transmit Antenna Type:	SCIENTIFIC-ATLANTA 8007	
6.0 GHz Gain (dBi) / Diameter (m)	54.0 / 11.0	
3 dB / 15 dB Half Beamwidth	0.10 / 0.20	
Operating Mode	TRANSMIT AND RECEIVE	
Modulation	ANALOG & DIGITAL	
Emission / Receive Band (MHz)	(1) 21K9G7W - 72M0G7W / 3700.0000 - 4200.0000	
	(1) 4M00G7F - 36M0G7F / 3700.0000 - 4200.0000	
	(2) 18M0F8F - 36M0F8F / 3700.0000 - 4200.0000	
Emission / Transmit Band (MHz)	(1) 21K9G7W - 72M0G7W / 5925.0000 - 6425.0000	
	(1) 4M00G7F - 36M0G7F / 5925.0000 - 6425.0000	
	(2) 18M0F8F - 36M0F8F / 5925.0000 - 6425.0000	
	(1) DIGITAL	(2) ANALOG
Max. Available RF Power (dBW)/4 kHz)	-2.70	-0.50
(dBW)/MHz)	21.30	23.50
Max. EIRP (dBW)/4 kHz)	51.30	53.50
(dBW)/MHz)	75.30	77.50
Max permissible Interference Power		
4.0 GHz, 20% (dBW/1 MHz)	-168.0	
4.0 GHz, 0.0100% (dBW/1 MHz)	-156.0	
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	2.0 W / 144.0 W	
Azimuth Range (Min/Max)	102.6 / 257.0	
Corresponding Elevation Angles	5.3 / 5.7	
Radio Climate	A	
Rain Zone	2	
Max Great Circle Coordination Distance (Mi/Km)		
4.0 GHz	453.8 / 730.4	
6.0 GHz	203.5 / 327.6	
Precipitation Scatter Contour Radius (Mi/Km)		
4.0 GHz	394.0 / 634.2	
6.0 GHz	99.0 / 159.3	

Table of Earth Station Coordination Values
07/12/2002

Earth Station Name SOUTHURY CT
 Owner TELENOR SATELLITE SERVICES
 Latitude (DMS) (NAD83) 41 27 6.3 N
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 Ground Elevation (Ft/m) 120.0 / 36.58 AMSL
 Antenna Centerline (Ft/m) 22.0 / 6.71 AGL
 Antenna Model SCIENTIFIC-ATLANTA 8007
 Objectives: Receive -168.0 (dBW /1 MHz)
 Transmit -154.0 (dBW /4 kHz) TX Power -0.5 (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	8.39	102.62	-10.00	141.4	-10.00	100.0
5	8.07	97.63	-10.00	144.5	-10.00	100.0
10	7.67	92.64	-10.00	149.1	-10.00	100.0
15	7.17	87.64	-10.00	155.5	-10.00	100.0
20	6.75	82.64	-10.00	161.0	-10.00	100.0
25	6.36	77.64	-10.00	166.5	-10.00	100.0
30	5.92	72.64	-10.00	174.4	-10.00	100.0
35	5.53	67.64	-10.00	179.1	-10.00	100.0
40	4.86	62.64	-10.00	187.9	-10.00	100.0
45	4.71	57.64	-10.00	190.3	-10.00	100.0
50	4.74	52.64	-10.00	189.8	-10.00	100.0
55	4.89	47.64	-9.95	187.7	-9.95	100.0
60	5.04	42.64	-8.75	192.2	-8.75	100.0
65	5.18	37.64	-7.39	198.1	-7.39	100.0
70	5.31	32.64	-5.84	205.3	-5.84	100.0
75	5.37	27.64	-4.04	212.7	-4.04	100.0
80	5.41	22.64	-1.87	226.2	-1.87	100.0
85	5.44	17.64	0.84	244.7	0.84	100.0
90	5.45	12.64	4.46	272.8	4.46	100.0
95	5.44	7.64	9.92	322.6	9.92	117.1
100	5.41	2.64	21.44	436.4	21.44	170.4
105	5.37	1.66	26.49	706.3	26.49	319.4
110	5.31	5.25	13.99	362.7	13.99	133.4
115	5.23	8.83	8.35	310.9	8.35	112.8
120	5.14	12.32	4.73	279.8	4.73	100.0
125	5.05	15.73	2.08	259.8	2.08	100.0
130	4.94	19.02	0.02	246.1	0.02	100.0
135	4.82	22.17	-1.65	236.4	-1.65	100.0
140	4.71	25.15	-3.01	228.8	-3.01	100.0
145	4.57	27.92	-4.15	223.5	-4.15	100.0
150	4.46	30.43	-5.08	219.4	-5.08	100.0
155	4.37	32.64	-5.84	216.3	-5.84	100.0
160	4.28	34.52	-6.45	214.1	-6.45	100.0
165	4.19	36.04	-6.92	212.9	-6.92	100.0
170	4.08	37.18	-7.26	212.6	-7.26	100.0
175	4.01	37.89	-7.46	212.7	-7.46	100.0
180	3.99	38.12	-7.53	212.7	-7.53	100.0

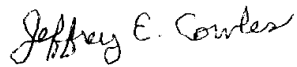
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Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	4.0 GHz		6.0 GHz	
			Antenna Gain (dBi)	Coordination Distance (Km)	Antenna Gain (dBi)	Coordination Distance (Km)
185	3.96	37.93	-7.48	213.5	-7.48	100.0
190	3.98	37.27	-7.29	214.2	-7.29	100.0
195	4.02	36.20	-6.97	215.4	-6.97	100.0
200	4.07	34.71	-6.51	217.3	-6.51	100.0
205	4.16	32.83	-5.91	219.5	-5.91	100.0
210	4.36	30.52	-5.11	221.0	-5.11	100.0
215	4.60	27.90	-4.14	223.1	-4.14	100.0
220	4.87	25.01	-2.95	226.3	-2.95	100.0
225	5.24	21.85	-1.49	231.1	-1.49	100.0
230	5.62	18.50	0.32	238.5	0.32	100.0
235	6.00	15.02	2.58	249.7	2.58	100.0
240	6.40	11.42	5.56	266.7	5.56	100.0
245	6.77	7.72	9.81	297.2	9.81	102.8
250	7.13	3.97	17.02	358.0	17.02	128.0
255	7.47	0.47	40.17	730.4	40.17	327.5
260	7.76	3.69	17.83	353.9	17.83	124.7
265	8.13	8.41	8.88	266.4	8.88	100.0
270	8.50	13.34	3.87	222.9	3.87	100.0
275	8.83	18.31	0.43	201.1	0.43	100.0
280	9.11	23.29	-2.18	182.5	-2.18	100.0
285	9.36	28.27	-4.28	164.2	-4.28	100.0
290	9.55	33.25	-6.04	151.4	-6.04	100.0
295	9.71	38.23	-7.56	141.5	-7.56	100.0
300	9.83	43.21	-8.89	135.1	-8.89	100.0
305	9.90	48.19	-10.00	129.4	-10.00	100.0
310	9.92	53.16	-10.00	129.2	-10.00	100.0
315	9.90	58.14	-10.00	129.4	-10.00	100.0
320	9.92	63.13	-10.00	129.2	-10.00	100.0
325	9.95	68.11	-10.00	129.0	-10.00	100.0
330	9.88	73.09	-10.00	129.5	-10.00	100.0
335	9.72	78.08	-10.00	130.9	-10.00	100.0
340	9.46	83.06	-10.00	133.2	-10.00	100.0
345	9.15	88.05	-10.00	134.5	-10.00	100.0
350	8.91	93.04	-10.00	136.6	-10.00	100.0
355	8.66	98.04	-10.00	138.9	-10.00	100.0

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: September 18, 2002

