

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**LAC COURTE OREILLES OJIBWA PBC (WOJB)**  
**HAYWARD, WI**  
**Satellite Earth Station**

Prepared By:  
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August 29, 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. 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 that 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 receive-only earth station.

### Company

AT&T Communications of the Midwest

No Other Carriers Reported Potential Interference Cases.

### 3. SUPPLEMENTAL SHOWING

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 08/27/2003.

Company

AT&T COMMUNICATIONS OF MICHIGAN  
AT&T COMMUNICATIONS OF THE MIDWEST INC  
AT&T COMMUNICATIONS OF WISCONSIN, INC  
AT&T CORP  
BELL CANADA - ONTARIO REGION  
MANITOBA TELEPHONE COMPANY

## **4. EARTH STATION COORDINATION DATA**

This section presents the data pertinent to frequency coordination of the proposed earth station that was circulated to all carriers within its coordination contours.

SATELLITE EARTH STATION  
 FREQUENCY COORDINATION DATA  
 08/25/2003

Company	LAC COURTE OREILLES OJIBWA PBC (WOJB)
Owner code	WOJB
Earth Station Name, State	HAYWARD, WI
Latitude (DMS) (NAD83)	45 56 35.5 N
Longitude (DMS) (NAD83)	91 21 39.5 W
Ground Elevation AMSL (Ft/m)	1345.47 / 410.08
Antenna Centerline AGL (Ft/m)	9.00 / 2.74
Receive Antenna Type:	C40381 COMTECH ANTENNA SY
	3.8 METER PF
4.0 GHz Gain (dBi) / Diameter (m)	42.9 / 3.8
3 dB / 15 dB Half Beamwidth	0.70 / 1.40
Operating Mode	RECEIVE ONLY
Modulation	ANALOG & DIGITAL
Emission / Receive Band (MHz)	30K0F1D - 10M3G7W / 3700.0000 - 4200.0000
Max permissible Interference Power	
4.0 GHz, 20% (dBW/1 MHz)	-156.0
4.0 GHz, 0.0100% (dBW/1 MHz)	-146.0
Range of Satellite Arc (Geostationary)	
Degrees Longitude	60.0 W / 143.0 W
Azimuth Range (Min/Max)	139.7 / 240.4
Corresponding Elevation Angles	28.8 / 17.3
Radio Climate	A
Rain Zone	2
Max Great Circle Coordination Distance (Mi/Km)	
4.0 GHz	224.6 / 361.5
Precipitation Scatter Contour Radius (Mi/Km)	
4.0 GHz	317.7 / 511.3

Table of Earth Station Coordination Values  
08/25/2003

Earth Station Name        HAYWARD WI  
 Owner                    LAC COURTE OREILLES OJIBWA PBC  
 Latitude (DMS) (NAD83) 45 56 35.5 N  
 Longitude (DMS) (NAD83) 91 21 39.5 W  
 Ground Elevation (Ft/m)    1345.47 /     410.08 AMSL  
 Antenna Centerline (Ft/m)    9.00 /        2.74 AGL  
 Antenna Model                COMTECH ANTENNA SY 3.8 METER PF  
 Objectives: Receive        -156.0 (dBW /1 MHz)

Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	Antenna Gain (dBi)	4.0 GHz Coordination Distance (Km)
0	0.00	118.18	-9.37	289.3
5	0.00	122.87	-10.67	281.0
10	0.00	124.04	-10.91	279.5
15	0.00	119.92	-10.07	284.8
20	0.00	115.73	-8.39	295.7
25	0.00	111.48	-8.10	297.6
30	0.00	107.18	-8.10	297.6
35	0.00	102.85	-8.10	297.6
40	0.00	98.49	-8.10	297.6
45	0.00	94.12	-8.10	297.6
50	0.00	89.74	-8.10	297.6
55	0.00	85.36	-8.10	297.6
60	0.00	80.99	-8.10	297.6
65	0.00	76.63	-8.10	297.6
70	0.00	72.30	-8.10	297.6
75	0.48	67.91	-8.10	263.5
80	0.40	63.66	-8.10	273.2
85	0.57	59.40	-8.10	256.4
90	0.44	55.31	-8.10	267.5
95	0.68	51.19	-8.10	249.5
100	0.72	47.26	-8.10	246.9
105	0.55	43.60	-8.10	257.5
110	0.51	40.11	-7.15	266.5
115	0.53	36.86	-6.47	269.2
120	0.57	33.96	-6.10	268.9
125	0.58	31.55	-6.10	268.6
130	0.44	29.85	-6.04	281.1
135	0.36	28.81	-5.62	293.9
140	0.35	28.47	-5.49	296.6
145	0.00	29.25	-5.80	314.0
150	0.45	30.03	-6.10	280.2
155	0.30	31.98	-6.10	298.1
160	0.33	33.65	-6.10	294.8
165	0.43	34.91	-6.10	282.0
170	0.48	35.84	-6.27	274.8
175	0.51	36.42	-6.38	271.2
180	0.49	36.65	-6.43	273.0



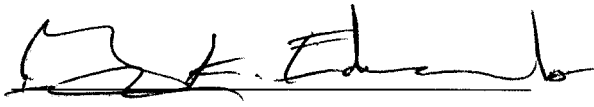
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 Antenna Centerline (Ft/m)    9.00 /    2.74 AGL  
 Antenna Model            COMTECH ANTENNA SY 3.8 METER PF  
 Objectives: Receive       -156.0 (dBW /1 MHz)

Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	Antenna Gain (dBi)	4.0 GHz Coordination Distance (Km)
185	0.39	36.54	-6.41	285.3
190	0.00	36.32	-6.36	309.4
195	0.00	35.32	-6.16	310.8
200	0.00	33.95	-6.10	311.3
205	0.00	32.26	-6.10	311.3
210	0.00	30.26	-6.10	311.3
215	0.00	28.00	-5.30	317.5
220	0.00	25.51	-4.30	324.6
225	0.00	22.82	-3.23	332.4
230	0.00	20.05	-2.12	340.6
235	0.00	18.05	-0.15	355.4
240	0.00	17.27	0.63	361.4
245	0.00	17.86	0.04	356.9
250	0.00	19.70	-1.80	343.0
255	0.00	22.49	-3.09	333.4
260	0.00	25.92	-4.47	323.4
265	0.00	29.77	-6.01	311.9
270	0.00	33.90	-6.10	311.3
275	0.00	38.21	-6.74	306.8
280	0.00	42.65	-8.10	297.6
285	0.00	47.19	-8.10	297.6
290	0.00	51.79	-8.10	297.6
295	0.00	56.45	-8.10	297.6
300	0.00	61.13	-8.10	297.6
305	0.00	65.85	-8.10	297.6
310	0.00	70.59	-8.10	297.6
315	0.28	75.32	-8.10	287.6
320	0.00	80.11	-8.10	297.6
325	0.23	84.87	-8.10	294.0
330	0.32	89.65	-8.10	282.0
335	0.00	94.42	-8.10	297.6
340	0.00	99.20	-8.10	297.6
345	0.00	103.96	-8.10	297.6
350	0.00	108.72	-8.10	297.6
355	0.00	113.46	-8.10	297.6

## 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: 

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DATED: August 29, 2003