

# FREQUENCY COORDINATION AND INTERFERENCE ANALYSIS REPORT

Prepared for  
**WESTERN ILLINOIS UNIVERSITY (WIUM)**  
**MACOMB, IL**  
**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**

An interference study was completed for the proposed earth station. The analysis did not identify any potential interference conflicts within the coordination contours of the proposed earth station site. There are no unresolved interference objections with this earth station antenna.

### 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 CORP

MCI NETWORK SERVICES INC

## **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  
 08/26/2003

Company	WESTERN ILLINOIS UNIVERSITY (WIUM)	
Owner code	ZWESIL	
Earth Station Name, State	MACOMB, IL	
Latitude (DMS) (NAD83)	40 28 27.8 N	
Longitude (DMS) (NAD83)	90 40 31.6 W	
Ground Elevation AMSL (Ft/m)	650.03 /	198.12
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)	137.6 / 243.4	
Corresponding Elevation Angles	33.6 / 19.5	
Radio Climate	A	
Rain Zone	2	
Max Great Circle Coordination Distance (Mi/Km)		
4.0 GHz	213.7 / 343.9	
Precipitation Scatter Contour Radius (Mi/Km)		
4.0 GHz	313.7 / 504.9	

Table of Earth Station Coordination Values  
08/26/2003

Earth Station Name       MACOMB IL  
 Owner                    WESTERN ILLINOIS UNIVERSITY  
 Latitude (DMS) (NAD83) 40 28 27.8 N  
 Longitude (DMS) (NAD83) 90 40 31.6 W  
 Ground Elevation (Ft/m)   650.03 /   198.12 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	0.39	115.05	-8.12	273.9
5	0.44	119.71	-9.98	256.7
10	0.33	120.65	-10.23	268.2
15	0.28	116.73	-8.79	283.3
20	0.27	112.75	-8.10	288.5
25	0.24	108.70	-8.10	292.1
30	0.23	104.61	-8.10	294.0
35	0.00	100.45	-8.10	297.6
40	0.00	96.31	-8.10	297.6
45	0.00	92.15	-8.10	297.6
50	0.00	87.99	-8.10	297.6
55	0.00	83.83	-8.10	297.6
60	0.00	79.68	-8.10	297.6
65	0.26	75.52	-8.10	289.3
70	0.46	71.38	-8.10	265.8
75	0.86	67.22	-8.10	238.5
80	0.98	63.17	-8.10	231.2
85	1.01	59.22	-8.10	229.8
90	0.99	55.39	-8.10	230.6
95	0.86	51.75	-8.10	238.2
100	0.75	48.28	-8.10	245.0
105	0.82	44.91	-8.10	240.6
110	0.82	41.85	-7.84	242.4
115	0.96	38.99	-6.90	239.0
120	1.24	36.39	-6.38	231.7
125	1.43	34.32	-6.10	227.1
130	1.40	33.01	-6.10	228.0
135	1.41	32.31	-6.10	227.8
140	1.58	32.13	-6.10	222.5
145	1.57	32.82	-6.10	222.7
150	1.30	34.39	-6.10	231.3
155	1.26	36.31	-6.36	231.2
160	1.02	38.48	-6.80	236.8
165	0.67	40.39	-7.25	254.9
170	0.74	41.50	-7.70	248.0
175	0.79	42.17	-7.97	243.5
180	0.78	42.42	-8.07	243.3



Table of Earth Station Coordination Values  
08/26/2003

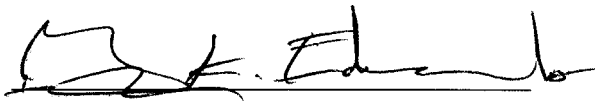
Earth Station Name       MACOMB IL  
 Owner                    WESTERN ILLINOIS UNIVERSITY  
 Latitude (DMS) (NAD83) 40 28 27.8 N  
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 Antenna Model            COMTECH ANTENNA SY 3.8 METER PF  
 Objectives: Receive       -156.0 (dBW /1 MHz)

Azimuth (Deg)	Horizon Elevation Angle (Deg)	Antenna Disc. Angle (Deg)	Antenna Gain (dBi)	4.0 GHz Coordination Distance (Km)
185	0.76	42.20	-7.98	245.0
190	0.75	41.49	-7.70	247.3
195	0.75	40.32	-7.23	250.5
200	0.67	38.79	-6.86	257.4
205	0.56	36.91	-6.48	267.4
210	0.53	34.62	-6.10	272.0
215	0.56	32.00	-6.10	269.8
220	0.57	29.15	-5.76	271.6
225	0.47	26.19	-4.57	288.0
230	0.39	23.19	-3.38	306.5
235	0.26	20.93	-2.47	329.7
240	0.00	19.79	-1.89	342.3
245	0.00	19.58	-1.68	343.9
250	0.00	20.56	-2.33	339.0
255	0.00	22.59	-3.14	333.1
260	0.00	25.42	-4.27	324.9
265	0.00	28.81	-5.62	315.2
270	0.22	32.46	-6.10	308.5
275	0.24	36.51	-6.40	304.0
280	0.24	40.75	-7.40	296.5
285	0.20	45.13	-8.10	297.3
290	0.35	49.56	-8.10	279.3
295	0.44	54.07	-8.10	267.6
300	0.44	58.67	-8.10	267.8
305	0.55	63.29	-8.10	257.9
310	0.59	67.96	-8.10	254.9
315	0.60	72.65	-8.10	254.6
320	0.53	77.36	-8.10	259.1
325	0.66	82.08	-8.10	250.9
330	0.57	86.81	-8.10	256.7
335	0.47	91.54	-8.10	264.2
340	0.54	96.26	-8.10	258.7
345	0.53	100.98	-8.10	259.5
350	0.52	105.70	-8.10	259.9
355	0.43	110.38	-8.10	269.1

## 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