2. Utilize actual path blockage provided by man-made obstacles to increase the path losses between the feeder link station and the terrestrial station.

3. Conduct on-site RFI measurements to determine actual RFI environment and also to indicate what additional corrective steps are necessary.

4. Construct a shield towards the terrestrial facilities, if necessary.

5. Change the terrestrial antennas to reduce the cases to acceptable levels.

6. Relocate the proposed feederlink to another area to assure interference free operation by taking adavatage of terrain features.

For the site analyzed in Rapid City, South Dakota operating in the 11 GHz common carrier band there were no predicted interference conflicts with point-to-point terrestrial systems.

Congested Area

For both the 6 GHz and 11 GHz bands significant interference cases need to be resolved even after 15 dB of blockage provided by a shield is realized. The above steps need to be repeated to attempt to further reduce the number of stations that could be interfered with by a feeder uplink.

Based on the severity of the predicted cases the next step would be to conduct on-site RFI measurements to document the actual interference environment. While performing the on-site RFI measurements, microwave path blockage surveys should be conducted to determine if sufficient blockage exists for both the cases that were measured and those that may not be operational. Several iterations of the measurement process may be required to identify a viable location.

4.0 Conclusions

4.1 Downlink Conclusions for 6425-6525 MHz, 6525-6875 MHz, 6875-7125 MHz, 12.75-13.25 GHz Frequency Bands

The downlink studies were based on a worst case interference coupling scenario. A Globalstar satellite was assumed to always engage the mainbeam of a terrestrial antenna. Also, for terrestrial antennas pointing downwards the directivity was not applied.

4.1.1 Conclusions for Operational-Fixed Services in the 6525 - 6875 MHz Band

The total number of analyzed cases represent about 10 percent of approximately 19,000 licensed receivers in the 6525 - 6875 MHz band. The analyzed microwave levels were all located in congested link areas (as defined by the FCC's Report DC-1950 dated September 23, 1991) and contained a sufficiently wide variation in their parameters to be considered an acceptable representative sample.

There were 1,922 cases analyzed in this band. There were 1,695 (88.2 percent) cases that satisfied the interference objective. Of the cases that remain, 9.5 percent are within 3 dB of the objective leaving 2.3 percent that require a more detailed analysis.

The analysis showed a good potential for sharing if appropriate coordination procedures are adapted. Additional analyses, providing a more exact interference prediction involving the mobile satellite's exact position and the relevant interference duration is needed. This could only serve to reduce the interference levels presented in this study.

4.1.2 Conclusions for Auxiliary Broadcasting Services (Point-to-Point Fixed) in the 6875 - 7125 MHz Frequency Band

The total number of cases analyzed represent about 13.8 percent of the approximately 2600 licensed receivers in the 6875 - 7125 MHz band. The dominant modulation is FM/Video, which allows the utilization of a lower interference objective compared to other types of modulations.

There were a total of 359 cases analyzed. The long haul criteria of 66 dB C/I was met by 97.8 percent of the cases. The short haul criteria was met by 99.7 percent of the cases. The remaining 0.3 percent of the cases were within 0.9 dB of the short haul criteria of 54 dB C/I.

Given similar characteristics of the paths analyzed in the five areas, the continued deployment of FM/Video and following appropriate coordination procedures, sharing within this band appears feasible. Electronic news gathering (ENG) conclusion are given in Section 4.1.4.

4.1.3 Conclusion for Auxiliary Broadcast, Cable Television Relay Service (CARS) in the 12.75 - 13.25 GHz Band

The total number of cases analyzed represent approximately 10 percent of the licensed receivers in this band.

The analysis show that all but two of the FM/Video cases met the interference objective of 54 dB C/I. The FM/Video comprised 50.1 percent of the total number of cases anlayzed.

The vestigial single sideband AM/Video, VSB-AM/Video, cases were 49.9 percent of the total number of cases. There were 11 VSB-AM/Video cases, or 1.3 percent of the total cases, which did not meet the objective. Some of these VSB/AM/Video cases will require further analyses involving the satellite's orbital mechanics to modify the worst case interference calculation.

Long haul FM/Video, which could exist in this band, may prove harder to resolve with due to the higher C/I requirement of 66 dB C/I.

4.1.4 Electronic News Gathering (ENG) or TV Pick-up in the 6425-6525 MHz, 6875-7125 MHz and 12.75-13.25 GHz Frequency Bands

The studied configurations in Appendix D, summarized in Section 3.1.4.2, show little impact from a Globalstar satellite interfering under the conditions analyzed. Under worst case fading conditions, the four ENG configurations remain basically unaffected by the interference.

Analysis of the performance of other various ENG configurations under worst case fading conditions should be complimented with an analysis of the interference duration, the desired carrier's fade duration, and the probability of a simultaneous occurrence of these events.

4.2 Uplink Conclusions

The results of the interference analyses are shown in the following sections were based on the standard coordination procedures followed for geostationary satellites. The analysis assumed the feeder link antenna elevation angle of 10 degrees with an azimuthal variation between 0 and 360 degrees resulting in a worst case analysis.

4.2.1 Private Operational-Fixed (OFS) Microwave Service 6525 - 6875 MHz Frequency Band

The congested area site, Staten Island, showed a total number of 351 cases. After over-the-horizon (OH) losses were considered, a total of 299 cases, or 85.2 percent, met the interference criteria. There were 33 cases, or 9.4 percent of the total cases resolved by assuming a 15 dB shielding factor. The remaining 19 unresolved cases require further analysis.

The non-congested area site, Rapid City, shows only 14 cases. A

total of twelve cases, or 85.7 percent were resolved by over-horizon-loss. A shielding factor of 15 dB did not resolve the two remaining cases requiring further analysis.

The non-congested area analysis displays a lesser number of cases compared to the congested area's. The main weighting factors in determining the difficulties associated with a site is the severity of the unresolved cases, and the effectiveness of the applicable interference mitigation techniques.

The following interference mitigation techniques may be required to resolve the remaining cases, in both the congested and non-congested areas.

1. Reduce the transmission power density of the Globalstar system in a portion of the 6525 to 6875 MHz band.

2. Utilize actual path blockage provided by man-made obstacles to increase the path losses between the feederlink station and the terrestrial station.

3. Conduct on-site RFI measurement to determine the actual RFI environment and to also indicate what additional corrective steps are necessary.

4. Construct a shield towards the terrestrial facilities, if necessary.

5. Change or upgrade the terrestrial antennas to reduce the cases to acceptable levels.

6. Relocate the proposed feederlink site to another area to assure interference free operation by taking advantage of terrain features.

Locating a feeder link in congested areas may require several iterations of the above steps in addition to field surveys and RFI measurements.

Our analysis in the 6 GHz OFS band, indicates that locating feederlinks in non-congested areas may be more easily achieved. Also, as long as proper coordination procedures and proper interference criteria are used to avoid conflicts with existing users, feeder links should be able to share the frequency spectrum. Further analyses are required to quantify the exact interference objectives based upon the dynamic variation of azimuth and elevation angles of a LEO feederlink.

4.2.2 Common Carrier Terrestrial Microwave in the 10.7 - 10.45 and 11.20 - 11.45 GHz Frequency Bands

The non-congested area site, Rapid City, analysis showed a total number of 3 cases all of which where reduced by over-the-horizon (OH) loss.

The congested area site, Staten Island, analysis resulted in a

total of 191 cases. After over-the-horizon losses were considered, a total of 178 cases, or 93.2 percent, were resolved. There were 8 cases, or 4.2 percent, resolved by assuming a 15 dB shielding factor. The remaining 5 cases require further analysis including refining the interference objective. Several interference mitigation techniques may be required, as well. The interference mitigation techniques were given in Section 4.2.1.

The number of unresolved cases in the congested area remain manageable. While the non-resolved cases are very few in the studied congested area, we recommend placing a feederlink in non-congested areas since the encountered number of cases remain substantially low.

4.3 Refinements to the Study

The main area which requires refinement is the assessment of interference duration. The downlink interference prediction could be refined by inclusion of the orbital dynamics. The mobility of the satellite will define for us the period of time which it could be resident in the mainbeam of a terrestrial antenna. This period can be applied to the terrestrial reliability analysis to examine if the interference could compromise a realistic path performance.

Similarly, the uplink can benefit from quantizing the time the feederlink antenna is pointing at a certain azimuth and elevation angle. By realizing the duration at a given azimuth and elevation, the power flux density can be adjusted down. This results in reducing the reliance on worst case analysis of maximum power at all azimuths and 10 degrees elevation angle 100 percent of the time.

The determination of instantaneous azimuth and elevation angle for both uplink and downlink analysis is critical. This determination will enable us to predict precise interference levels by applying the proper terrestrial antenna directivity and the associated Globalstar's segments' power flux density.

Applying the antenna directivity and the actual (not maximum) power flux density duration in all of the considered bands, should yield higher spectrum efficiency and facilitate frequency coordination amongst the sharing parties.

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Table 2.1.1	FM-Video Parameters.
Table 2.1.3	Suggested C/I Protection Ratios for FM-Video Systems.
Figure 2.1.1-1	Globalstar's Normalized Power Spectral Density Based on -164.5 dBW/4kHz.
Table 2.2.1-1	FM/FDM Systems' Parameters Used in Generating the C/I Objectives.
Figure 2.2.1-1	Required C/I (dB) Protection Ratio for 2400 Channels FM/FDM.
Figure 2.2.1-2	Required C/I (dB) Protection Ratio for 1800 Channels FM/FDM.
Figure 2.2.1-3	Required C/I (dB) Protection Ratio for 900 Channels FM/FDM.
Figure 2.2.1-4	Required C/I (dB) Protection Ratio for 780 Channels FM/FDM.
Figure 2.2.1-5	Required C/I (dB) Protection Ratio for 600 Channels FM/FDM.
Figure 2.2.1-6	Required C/I (dB) Protection Ratio for 480 Channels FM/FDM.
Figure 2.2.1-7	Required C/I (dB) Protection Ratio for 300 (10 MHz) Channels FM/FDM.
Figure 2.2.1-8	Required C/I (dB) Protection Ratio for 300 (5 MHz) Channels FM/FDM.
Figure 2.2.1-9	Required C/I (dB) Protection Ratio for 120 Channels FM/FDM.
Table 2.3-1	Typical Digital Microwave (T/I) (dB) Requirements.

A

APPENDIX A - OPERATION-FIXED SERVICE (OFS) (6525 to 6875 MHz)

A1.0 INTRODUCTION

A1.1 General

In this Appendix, a downlink from one Globalstar satellite operating in the 6525 to 6875 MHz OFS is analyzed. The effects of a Globalstar satellite operating with a variable power flux density ranging from -164.5 to -173.5 dBW/m^2/4 kHz is investigated into terrestrial receivers located in the following geographic areas:

Salt Lake City, Utah
Washington, DC
Chicago, Illinois
San Mateo, California
New Orleans, Louisiana

The 6525 - 6875 MHz frequency band is extensively used by private industry for internal communication requirements. Primarily used for "backbone" applications, the band has been growing steadily over the past 5 years with roughly 19,000 U.S. based frequency assignments in existence today. In the past, most OFS microwave systems used analog modulation schemes with traffic capacities that varied between 120 and 780 channels. Recently, the trend has been to use digital modulation schemes for implementing new systems and replacing existing analog systems. These digital systems utilized capacities from 4T1 (6.312 Mbps) to 1 DS3 (45 Mpbs).

The actual system parameters for fixed microwave paths in each area are analyzed and the received carrier level is compared to the predicted interference from a Globalstar satellite.

A1.2 Basis of Analysis

For the downlink analysis the following criteria were used in the analysis.

- Site locations were selected in congested terrestrial microwave areas with varying terrain features and climate-zones. This ensures that a significant magnitude for a diverse variety of terrestrial microwave systems are considered in areas with varying Radio Frequency (RF) propagation characteristics.

- Once the site locations were established, a geographic boundary was defined as a 120 mile square area with the city

reference coordinates (as listed in FCC Rule Part 76.53) located in the center of this area. All microwave paths operating within this boundary are considered in this analysis.

- The power flux density (PFD) of the Globalstar satellite signal varies as shown in Tables A2.3-1 from a minimum of -173.5 to a maximum of -164.5 dBW/m^2/4 kHz.

- The tilt angle of a terrestrial microwave receive antenna was calculated based upon the difference in the overall height above sea level between a path's transmit and receive antennas. The tilt angle was then used to determine the PFD. When the terrestrial antenna is pointed in a downward direction a PFD of -173.5 dBW/m^2/4 kHz was employed and if the antenna is pointed straight upward a PFD of -164.5 dBW/m^2/ 4 kHz was used. For 0 to 90 degrees pointing angles, the maximum PFD coupled with the maximum antenna gain was used.

- This analysis utilizes the fact that a terrestrial microwave antenna will only be main beam illuminated by one Globalstar satellite at a time.

- The bandwidth of the terrestrial receiver is based upon typical receive filter bandwidths currently operating in the appropriate frequency bands and varies depending upon the modulation scheme of the transmitter for:

  - Analog (FDM/FM) systems, typical receive filters are approximately two times the emission bandwidth of the transmitter.

  - Digital Systems, a receive filter bandwidth of 1.5 times the emission bandwidth was used.

  - Video Systems (AM and FM) a receiver bandwidth equal to the transmitter bandwidth was used.

- The Globalstar satellite downlink signal consists of 13-1.23 MHz bandwidth signals occupying a 16.5 MHz bandwidth channel with 8 left hand circular polarized (LHCP) channels and 8 right hand circular polarized channels (RHCP) utilizing approximately 200 MHz of bandwidth.

- The critical angle for determining the interfering signal level into a terrestrial receive antenna from a LEO satellite is in the vertical plane. Since the vertical radiation patterns of terrestrial microwave antennas are not usually available from the antenna manufacturers, the following assumption is used in our analysis. It is assumed that due to

the geometric symmetry of terrestrial parabolic antennas, the radiation pattern in the vertical plane (perpendicular to the ground) is equivalent to the radiation pattern in the horizontal plane.

- Interference analysis is based on co-channel interference objectives.

- No geographic or man-made obstruction is assumed to exist between the terrestrial microwave antenna and the proposed LEO satellite.

- For terrestrial systems utilizing billboard reflectors as passive repeaters, if the predicted LEO satellite signal level fails to meet or satisfies the prescribed interference criteria at the repeater location it is assumed that the criteria would continue to be missed or satisfied at the final receive station.

- When a terrestrial receive station utilizes a periscope antenna system (consisting of a billboard reflector mounted above ground level which reflects the desired signal toward the ground where a parabolic antenna is pointed straight upward), the LEO satellite signal level was calculated twice. The first method determines the satellite signal level into the terrestrial receiver when the satellite passes the horizon and illuminates the billboard at a PFD of approximately -173.5 $dBW/m^2/4$ kHz. The second method determines the signal level when the satellite passes directly above the parabolic antenna that is pointed straight upward. Both signal levels were then compared to the appropriate interference objective to determine if the satellite signal level would satisfy the objective in both worst-case interference scenarios.

- Currently applied for and deployed microwave systems were analyzed.

A2.0 Methodology

A2.1 General

The approach undertaken in this study is to determine from a practical point of view if the Globalstar satellite downlink with a power flux density ranging from a maximum of -164.5 $dBW/m^2/4$ kHz to a minimum of -173.5 $dBW/m^2/4$ kHz will cause excessive interference into typical fixed service microwave receivers operating in the 6525 to 6875 MHz band.

For the selected areas, Comsearch maintained database was searched for all the existing licensed records. Interference calculations

were based on methodology given in Section 2.1.3, the computed carrier-to-interference power ratios were then compared to the objectives derived in Section 2.1.2. The computed interference power level into a digital system was compared to the corresponding manufacturer's issued data. All the analyzed cases were then compiled, tabulated and reported here.

A2.2 Interference Objectives

- Required (C/I) levels from a single 16.5 MHz signal are estimated to be:

  FM Video traffic long haul 66 dB
  FM Video traffic short haul 54 dB
  FM/FDM 120 channel message 62 dB
  FM/FDM 300 channel message 58 dB
  FM/FDM 480 channel message 61 dB
  FM/FDM 600 channel message 66 dB
  FM/FDM 780 channel message 68 dB
  FM/FDM 900 channel message 65 dB

  (Details concerning these C/I levels are presented in Section 2.1.2 of the main report.)

- Interference objectives into digital receivers are based upon the interference criteria ($1x10^{-6}$ bit error Threshold-to-Interference Curves) specified by equipment manufacturers. This criteria varies between a co-channel interfering power level of -101 dBm to -105 dBm depending upon the modulation scheme and equipment traffic capacity.

A2.3 Power Flux Density (Interference Level)

The power flux density into a terrestrial receiver is based on the pointing angle of the terrestrial receive antenna and the associated power flux density levels presented in Table A2.3.1.

Elevation	PFD ($dBW/m^2/4$ kHz)
0	-173.5
5	-171.5
10	-169.5
15	-168.5
20	-166.5
25	-165.5
30	-164.5
40	-164.5
50	-164.5
60	-164.5
70	-164.5
80	-164.5
90	-164.5
The PFD has over a 3 dB margin for uneven loading	

TABLE A2.3-1
C-Band Power Flux Density (PFD)

A2.4 APPLICABLE INTERFERENCE LEVELS

6525 - 6875 MHz Operational-Fixed Microwave

Referencing equation 2-17 in Section 2.1.3 of the main report, with D=0 and for λ = 6725 MHz, the expected interference levels for different bandwidths are:

$I_R = -172.5 + G_R - FL$ dBm/4 kHz
$I_R = -141.5 + G_R - FL$ dBm/5 MHz
$I_R = -138.5 + G_R - FL$ dBm/10 MHz
$I_R = -135.5 + G_R - FL$ dBm/20 MHz

A3.0 SUMMARY OF RESULTS

A3.1 General

In this section, the results of individual areas studied will be presented. The material will be presented for each individual area and then the results of all areas analyzed will be collectively summarized. All terrestrial receivers analyzed are presented in Attachment 3.1-1 of this appendix.

A3.2 Areas Analyzed

A3.2.1 Salt Lake City, Utah

In the Salt Lake City area, there were a total of 284 terrestrial receivers analyzed. There were 196 cases with analog traffic, 86 digital cases and 2 video cases.

A summary of the number of cases that met the interference objectives and the unresolved cases are presented in Table A3.2.1-1.

	Total Number of Cases	Met Objectives	Unresolved
Analog Message Traffic	196	187 (95.4%)	9
Digital Traffic	86	41 (47.7%)	45
Video Traffic	2	0 (0%)	2
Total	284	228 (80.3%)	56

Table A3.2.1-1
Case Summary for Salt Lake City, Utah
6525 - 6875 MHz OFS Band

For the Salt Lake City area, 80.3 percent of all OFS cases met the interference objectives leaving 19.7 percent to be resolved.

Tables A3.2.1-2, A3.2.1-3 and A3.2.1-4 indicate the magnitude of the unresolved cases..

ANALOG CASES							
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**	**Comments**
12 Channel	0	0	0	0	0	0	
120/132 Channel	1	1	0	0	0	0	
300 Channel	0	1	0	1	0	0	**Passive**
420/480 Channel	1	0	0	0	0	0	
600 Channel	1	0	1	0	0	2	**Passive**
Total	3	2	1	1	0	2	

Table A3.2.1-2
Salt Lake City Analog C/I Case Distribution

Table A3.2.1-2 shows that 66.7 percent of the analog cases are within 3 dB of the objective. Also 66.7 percent of the cases involve passive reflectors.

DIGITAL CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**
8 DS-1	0	0	0	0	0	0
12 DS-1	0	0	0	0	0	0
1 DS-3	18	7	16	4	0	0
Total	18	7	16	4	0	0

Table A3.2.1-3
Salt Lake City, Digital Interference Case Distribution

In the digital cases listed in Table A3.2.1.-3, 91.1 percent were within 3 dB of the interference objective and the worst case was only 4 dB.

FM/VIDEO CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10-dB**
FM/Video	0	0	0	1	1	0

Table A3.2.1-4
Salt Lake City, FM/Video C/I Case Distribution

The two video cases in Table A3.2.1-4 had C/I levels of 58.7 dB and 60.7 dB. These two FM/Video cases did not meet the long haul objective of 66 dB, but met the short haul objective of 54 dB.

A3.2.2 Washington, DC

In the Washington, DC area, there were a total of 337 terrestrial receivers analyzed. There were 243 cases with analog traffic, 78 digital cases and 16 video cases.

A summary of the number of case that met the interference objectives and the unresolved cases are presented in Table A3.2.2-1.

	Total Number of Cases	Met Objective	Unresolved
Analog Message Traffic	243	236 (97.1%)	7
Digital Traffic	78	55 (70.5%)	23
Video Traffic	16	16 (100%)	0
Total	337	307 (91.1%)	30

Table A3.2.2-1
Case Summary for Washington, DC
6525 - 6875 MHz OFS Band

For the Washington, DC Area, 91.1 percent of all OFS cases met the interference objectives leaving 8.9 percent to be resolved.

Tables A3.2.2-2, A3.2.2-3 and A3.2.2-4 indicate the magnitude of the unresolved cases.

ANALOG CASES							
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**	**Comments**
12/96 Channel	0	0	0	0	0	0	
120/132 Channel	0	2	0	3	0	0	
252/300 Channel	1	0	0	1	0	0	
420/480 Channel	0	0	0	0	0	0	
600/900 Channel	0	0	0	0	0	0	
Total	1	2	0	4	0	0	

Table A3.2.2-2
Washington, DC Analog C/I Case Distribution

Table A3.2.2-2 indicates that there were 14 unresolved cases for the analog traffic with no cases greater than 5 dB.

DIGITAL CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**
16 T 1	0	0	0	0	0	0
1DS-3	0	1	0	0	0	0
3 DS-3	0	0	6	16	0	0
Total	0	1	6	16	0	0

Table A3.2.2-3
Washington, DC Digital Interference Case Distribution

There are 23 unresolved digital cases listed in Table A3.2.2-3 with the worst case at 5 dB.

Traffic	0-1 dB	1-2 dB	2-3 dB	3-6 dB	6-10 dB	>10 dB
Video	0	0	0	0	0	0

Table A3.2.2-4
Washington, DC FM/Video C/I Case Distribution

Table A.3.2.2-4 shows that in the Washington, DC area, all video cases met the long haul carrier-to-interference objective of 66 dB.

A3.2.3 Chicago, Illinois

In the Chicago, Illinois area, there were a total of 396 terrestrial receivers analyzed. There were 295 cases with analog traffic, 92 digital cases and 9 video cases.

A summary of the number of cases that met the interference objectives and the unresolved cases are presented in Table A3.2.3-1.

	Total Number of Cases	Met Objective	Unresolved
Analog Message Traffic	295	291 (98.6%)	4
Digital Traffic	92	90 (97.8%)	2
Video Traffic	9	9 (100%)	0
Total	396	390 (98.5%)	6

Table A3.2.3-1
Case Summary for Chicago, Illinois
6525 - 6875 MHz OFS Band

Table A3.3.3-1 shows that for the Chicago, Illinois area 98.5 percent of all OFS cases met the interference objectives leaving 1.5 percent to be resolved.

Tables A.3.2.3-2, A3.2.3-3, and A3.2.3-4 indicate the magnitude of the unresolved cases.

ANALOG CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**
24/96 Channel	0	0	0	0	0	0
120/132 Channel	0	0	0	0	0	0
252/300 Channel	0	0	1	1	0	0
420/480 Channel	1	0	0	0	0	0
600 Channel	0	1	0	0	0	0
Total	1	1	1	1	0	0

Table A3.2.3-2
Chicago, Illinois Analog C/I Case Distribution

Table A3.2.3-2 shows that 75 percent of the unresolved analog cases are within 3 dB of the objective. There were no analog cases that missed the objective by more than 4.7 dB.

DIGITAL CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**
4 DS-1	0	0	0	0	0	0
8 DS-1	0	0	0	0	0	0
16 DS-1	0	0	0	0	0	0
24 DS-1	0	0	0	0	2	0
1 DS-3	0	0	0	0	0	0
Total	0	0	0	0	2	0

Table A3.2.3-3
Chicago, Illinois Digital Interference Case Distribution

Table A3.2.3-3 indicates that the 2 unresolved digital cases are greater than 6 dB.

FM/VIDEO CASES						
Traffic	0-1 dB	1-2 dB	2-3 dB	3-6 dB	6-10 dB	>10 dB
FM/Video	0	0	0	0	0	0

Table A3.2.3-4
Chicago, Illinois FM/Video C/I Case Distribution

There were no FM/Video cases listed in Table A3.2.3-4 for the Chicago, Illinois area.

A3.2.4 <u>San Mateo, California</u>

In the San Mateo, California area, there were a total of 606 cases analyzed. There were 380 cases with analog traffic, 226 digital cases and no FM/Video cases.

A summary of the number of cases that met the interference objectives and the unresolved cases are presented in Table A3.2.4-1.

	Total Number of Cases	Met Objective	Unresolved
Analog Message Traffic	380	363	17
Digital Traffic	226	114	112
Video Traffic	0	0	0
Total	606	477 (78.7%)	129

Table A3.2.4-1
Case Summary for San Mateo, California
6525 - 6875 MHz OFS Band

Table A3.2.4-1 shows that for the San Mateo, California area, 78.7 percent of all OFS cases met the interference objectives leaving 21.3 percent to be resolved.

Tables A.3.2.4-2, A3.2.4-3, and A3.2.4-4 indicate the magnitude of the unresolved cases.

ANALOG CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**
24/96 Channel	0	0	0	0	0	0
120/132 Channel	0	1	0	0	1	0
252/300 Channel	0	0	0	0	0	0
420/480 Channel	0	0	0	0	0	0
600/900 Channel	5	2	2	5	1	0
Total	5	3	2	5	2	0

Table A3.2.4-2
San Mateo, California Analog C/I Case Distribution

Table A3.2.4-3 indicates that 66.7 percent of the unresolved cases are within the 3 dB of the interference objectives. Two of the cases that miss within 3 to 6 dB range utilized periscope antennas and the 1 case greater than 6 dB also utilized a periscope antenna system.

DIGITAL CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**
4 DS-1	0	0	0	0	0	0
6 DS-1	1	0	0	0	0	0
8 DS-1	0	1	1	0	0	0
16 DS-1	4	1	0	0	0	0
1 DS-3	50	30	21	2	0	1
Total	55	32	22	2	0	1

Table A3.2.4-3
San Mateo, California Digital Interference Case Distribution

Table A3.2.4-3 shows that 97.3 percent of the digital cases are within 3 dB of the interference objectives.

FM/VIDEO CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**
FM/Video	0	0	0	0	0	0

Table A3.2.4-3
San Mateo, California FM/Video C/I Case Distribution

There are no FM/Video cases listed in Table A3.2.2-3 for the San Mateo, California area.

A3.2.5 New Orleans, Louisiana

In the New Orleans, Louisiana area, there were a total of 299 terrestrial receivers analyzed. There were 214 cases with analog traffic 76 digital cases and 9 video cases.

A summary of the number of cases that met the interference objectives and the unresolved cases are presented in Table A3.2.5-1.

	Total Number of Cases	Met Objective	Unresolved
Analog Message Traffic	214	212 (99.1%)	2
Digital Traffic	76	74 (94.4%)	2
Video Traffic	9	7 (77%)	2
Total	299	293 (99.0%)	6

Table A3.2.5-1
Case Summary for New Orleans, Louisiana
6525 - 6875 MHz OFS Band

Table A3.2.5-1 shows that for the New Orleans, Louisiana area 99.0 percent of all OFS cases met the interference objectives leaving 1.0 percent to be resolved.

Tables A.3.2.5-2, A3.2.5-3, and A3.2.5-4 indicate the magnitude of the unresolved cases.

ANALOG CASES						
Traffic	**0-1 dB**	**1-2 dB**	**2-3 dB**	**3-6 dB**	**6-10 dB**	**>10 dB**
12/96 Channel	0	0	0	0	0	0
120/132 Channel	0	0	0	0	0	0
252/300 Channel	0	2	0	0	0	0
420/480 Channel	0	0	0	0	0	0
600 Channel	0	0	0	0	0	0
Total	0	2	0	0	0	0

Table A3.2.5-2
New Orleans, Louisiana Analog C/I Case Distribution

Table A3.2.5-2 indicates that for the analog traffic there were no unresolved cases greater than 2 dB or the New Orleans, Louisiana area.