ESD-TR-72-011

DEPARTMENT OF DEFENSE

ELECTROMAGNETIC COMPATIBILITY ANALYSIS CENTER

VHF-FM MULTICHANNEL EQUIPMENT SITING CONSIDERATIONS

Prepared by T. Lesniakowski of the
IIT Research Institute

APRIL 1972

ESD-TR-72-011

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Technical Report

No. ESD-TR-72-011

May 1972

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Published by
Electromagnetic Compatibility Analysis Center
North Severn
Annapolis, Maryland 21402

FOREWORD

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This report was prepared as part of AF Project 649E under Contract F-19628-71-C-0221 by the staff of the IIT Research Institute at the Department of Defense Electromagnetic Compatibility Analysis Center.

To the extent possible, all abbreviations and symbols used in this report are taken from American Standard Y10.19 (1967) "Units Used in Electrical Science and Electrical Engineering" issued by the United States of America Standards Institute.

Users of this report are invited to submit comments which would be useful in revising or adding to this material to the Director, ECAC, North Severn, Annapolis, Maryland 21402, Attention ACW.

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ABSTRACT

Two Marine Corps VHF-FM radio equipments are analyzed to determine the constraints to be placed on their use when tactically deployed. The equipments are the AN/TRC-166, (AN/PRC-25 Manpack Radio with the AN/PCC-1 four-channel multiplex Telegraph-Telephone Terminal Set), and the AN/MRC-109 Vehicle-Mounted Radio Set with either the four-channel AN/VCC-1 (AN/MRC-134) or the eight-channel AN/VCC-2 (AN/MRC-135) multiplex Telegraph-Telephone Terminal Sets. Procedures that incorporate knowledge of terrain, path loss and frequency-distance separation criteria, are developed to assist communicators in the selection of frequencies for operation of AN/MRC-134/135 and AN/TRC-166 VHF-FM radios in the field.

KEYWORDS

FM
VHF
AN/PCC-1
AN/PRC-25
AN/TRC-166
AN/MRC-109
AN/MRC-134
AN/MRC-135
EQUIPMENTS

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SECTION 1

INTRODUCTION

BACKGROUND

As reported in Reference 1, ECAC previously analyzed the AN/MRC-109 vehicle-mounted VHF/FM multiplex radio equipments (AN/MRC-134 and AN/MRC-135), in representative field configurations, to determine what EMC considerations should be observed in their operation. That analysis was based on the assumed reception of desired signals at a level corresponding to a receiver input signal-to-sensitivity (S/R_s) ratio of 3 dB and an output signal-plus-noise-to-noise (S + N)/N ratio of approximately 13 dB. The S/R_s value of 3 dB assumes a very low ambient noise level such as might be available in a laboratory. Under conditions at, say, a command post in the field the ambient noise level is likely to be much higher. The 3 dB criterion, therefore, was marginal. Because the previous analysis was based on the assumed reception of marginal desired signals, considerable receiver protection was required. Consequently, the calculated guardbands were wide and the list of denied frequencies was long.

In the marginal signal case, the primary interference mechanism requiring the wide guardbands was adjacent band signal interactions. The magnitude of the guardband constraints led to a desire to determine the effect of larger cosite separation distances and stronger desired signals.

In the interest of flexibility, the Commandant, U.S. Marine Corps (CMC) requested (Reference 2) an additional analysis of the AN/MRC-134/135 equipments under conditions involving stronger signals (greater than 3 dB), and requested inclusion of the AN/TRC-166 manpack radio in the analysis. CMC requested that the analysis relate propagation path length and terrain features to various signal-to-noise ratios.

CMC further requested that the results be presented in a form that would be easily understood by field personnel. Signal-to-noise ratios, for example, should be related to marginal, medium and strong signal operating conditions, appropriately defined.

OBJECTIVES

The objectives of this analysis were to:

1. Provide the U.S. Marine Corps with frequency and distance separation criteria, related to specific signal-to-noise ratios, for the operation of AN/TRC-166 Manpack Radios and AN/MRC-134/135* vehicle-mounted VHF/FM equipments.
2. Provide propagation charts for estimating desired signal levels, as a function of distance and soil condition, over various types of terrain including jungle canopy.

APPROACH

Preliminary to analysis, the detailed electrical characteristics of the equipment under study were collected. Most of the data on the AN/MRC-134/135 vehicle-mounted equipment were obtained from documentation of previous work (Reference 1). As part of this project, the AN/MRC-134/135 receivers were examined to determine the effect of stronger desired signals (input S/R_s ratios of 15 dB and 25 dB) on spurious responses. Spurious emission and response data for the AN/PRC-25 radio (the basic equipment in the AN/TRC-166 configuration) were obtained by averaging values extracted from spectrum signatures on four separate equipment samples (References 3, 4, 5 and 6). Other data on the AN/TRC-166 were measured by ECAC.

With these data as inputs, specific antenna and equipment configurations were analyzed using a computer routine that produces Mutual Interference (MI) Tables. The MI Table program calculates guardbands which should be observed to minimize the mutual interference between the equipments considered. Additional frequencies that should not be used by collocated transmitters if spurious emissions and responses are to be avoided are also calculated.

The performance of the MI Table program, in making predictions with respect to the operation of the AN/MRC-134/135 configurations, was previously verified through comparison with measured data, and the results were reported in Reference 1. As part of this project the results of the AN/TRC-166 analysis were also verified by comparing the predictions with measured data. The guardband

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*The AN/MRC-134 equipment is configured with the AN/VCC-1 terminal; with the AN/VCC-2 terminal, it is designated the AN/MRC-135.

2. At a specific frequency separation, the interfering signal was fed from an AN/PRC-77 transmitter through a variable attenuator to the receiver. The interfering power level was increased until the output (S + I + N)/(I + N) ratio dropped to 10 dB.

3. The interference signal power was recorded.

4. Steps 1, 2, and 3 were repeated at several frequency separations.

Figure I-2 contains OFR curves for the low band case (f_o = 39.9 MHz). Three curves are shown for three uses of the diplexer, as indicated.

SPURIOUS FREQUENCY SPOT CHECKS

Spurious responses, predicted by the Mutual Interference (MI) Table program for the AN/TRC-166 equipment in both high and low operating bands, were spot-checked by laboratory measurements using the set up shown in Figure I-3. A noise-modulated AN/PRC-77 transmitter (Output power = 37 dBm), attenuated 40 dB by a diplexer, was used as the interfering signal source.

TABLES I-1 through I-7 contain the measured results for seven different receiver tuned frequencies. At each receiver tuned frequency, several undesired signal frequencies were chosen, corresponding to the frequencies that the MI Table program predicted would evoke a spurious response. At each interfering signal frequency three desired signal levels were used (S/R_s ratios of 3, 15 and 25 dB). In the last three columns of each table, an "X" indicates that the desired signal was obliterated by the interfering signal. A blank signifies that the level of the interfering signal at the frequency indicated was not high enough to reduce the (S + I + N)/(I + N) output ratio to 10 dB. In marginal cases, the actual (S + I + N)/(I + N) ratio is indicated in parentheses.

ADJACENT GUARDBAND SPOT CHECKS

The MI Table program predictions of adjacent signal guardbands for the AN/TRC-166 equipment were spot-checked in the field, using the measurement set up shown in Figure I-4. The guardbands, as predicted, provide protection not only against adjacent signal phenomena, but also against spurious emissions and spurious responses that are close to the receiver tuned frequency.

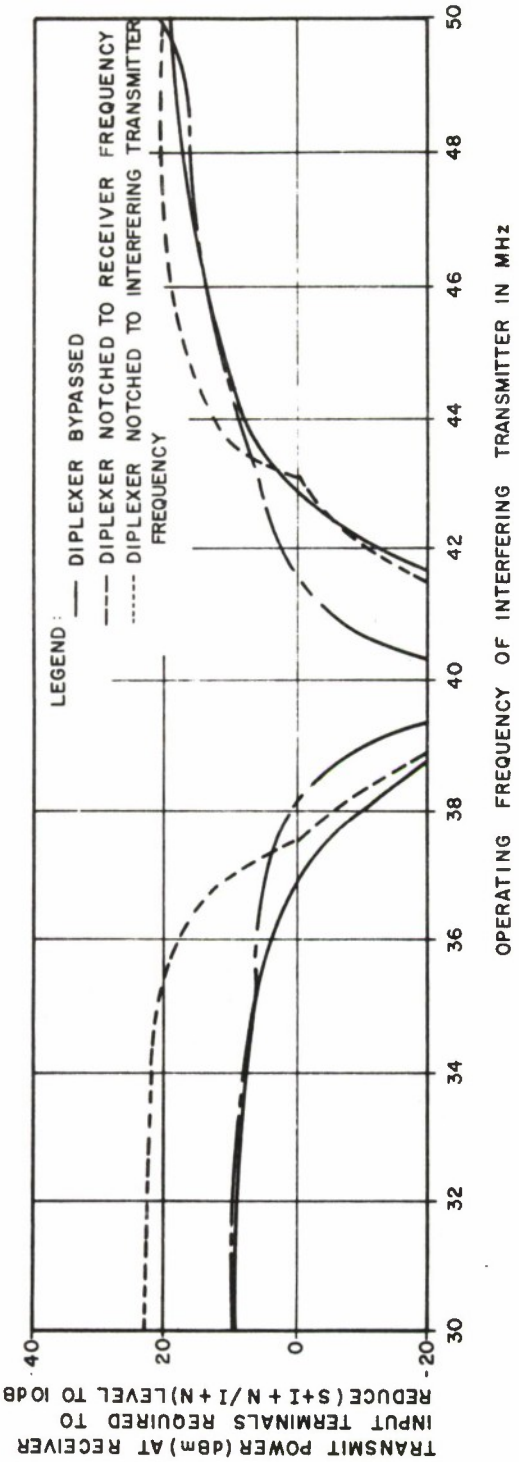


Figure I-2. AN/PRC-25 Off Frequency Rejection Characteristics for Receiver Frequency (f_o = 39.9 MHz)

SECTION 2

RESULTS, CONCLUSIONS, RECOMMENDATIONS

RESULTS

1. A procedure for determining the frequency separation necessary for the successful operation of collocated AN/MRC-134/135 and AN/TRC-166 equipment is provided in APPENDIX III. The procedure involves a coarse determination of expected desired signal power levels and the application of frequency and distance separation criteria. Curves for those purposes are provided. The procedure is intended for use by communicators in the field.

2. A Mutual Interference (MI) Table for operation of AN/TRC-166 equipment under marginal signal conditions is provided in APPENDIX II. Assuming that the guardbands necessary to avoid adjacent signal problems are observed, the MI Table lists additional transmitter frequencies that may result in spurious interactions for each receiver tuned frequency tabulated.

3. A circular nomogram for determining frequencies that may result in spurious interactions in AN/MRC-134/135 equipment, under medium and strong signal conditions, is presented in APPENDIX II, along with instructions for its use.

CONCLUSIONS

1. The F/D curves in this report take into account weak, medium and strong signal environments and permit operation of AN/MRC-134/135 equipments with narrower guardband restrictions than were recommended in Reference 1 for the marginal signal strength case.

2. Guardband restrictions can be reduced as the strength of the desired signal and the cosite distance between antennas increases. (In this regard, the desired signal path loss calculations herein are based on a statistical analysis of randomly sited transmitter and receiver antennas.) By locating antennas at different elevations and on opposite sides of natural obstructions such as hills and ridges, equipment performance can be improved with respect to both the desired signal path and the collocated coupling situation.

3. Any placement of AN/MRC-134/135 or AN/TRC-166 equipment that results in less than 100 dB of propagation loss over the desired signal path between transmitter and receiver antennas (see Figures III-3 through III-21) will result in signal strengths adequate for good communications.

4. Cross polarization of antennas provides a degree of protection against interference in the cosite case.

5. If cross polarization is not feasible in the case of collocated log-periodic antennas, horizontal polarization provides more isolation than vertical polarization.

RECOMMENDATIONS

It is recommended that:

1. The procedures in APPENDIX III be followed when siting AN/MRC-134/135 and AN/TRC-166 equipments and their components.
2. Diplexer/duplexer units be employed when locating VHF antennas within 50 feet of each other.

SECTION 3

ANALYSIS

EQUIPMENT DESCRIPTION

The equipments for which mutual interference criteria are to be established are the AN/TRC-166 VHF-FM radio set and the AN/MRC-134/135 vehicle-mounted VHF-FM radio set.

The AN/TRC-166 consists of two AN/PRC-25 Radio sets operating with an AN/PCC-1 full duplex, four-channel, multiplex unit and either a Log Periodic Antenna (LPA), or two whip antennas. With the 75 foot cables provided, the whip antennas can be separated by as much as 150 feet.

The AN/MRC-134/135 vehicle-mounted radio set consists of the RT-524 transmitter and the R-422 receiver, operating with either of two full-duplex multiplex units (the AN/VCC-1 with four-channels or the AN/VCC-2 with eight channels). Two log periodic antennas are provided. Both can be operated simultaneously without a diplexer/duplexer, or one of them can operate as a common antenna with a diplexer/duplexer.

Block diagrams of the AN/TRC-166 and AN/MRC-134/135 configurations analyzed in this report are shown in Figure 3-1.

PROCEDURE

The characteristics of the AN/TRC-166 equipment were measured in the laboratory and compared with calculated guardband requirements predicted by a mutual interference computer program. Mutual Interference Tables for conservative protection criteria were prepared. The predicted guardband requirements were spot-checked against measurements performed on AN/TRC-166 equipment under appropriate siting conditions in the field. Detailed information on the AN/TRC-166 measurements program is contained in APPENDIX I.

The AN/MRC-134/135 guardband requirements and denied frequencies reported in Reference 1 were originally calculated for marginal desired signal levels. The guardband requirements were recalculated in this analysis for the medium and strong desired signal cases, and frequency-distance curves reflecting the guardband requirements for all three signal strengths were prepared.

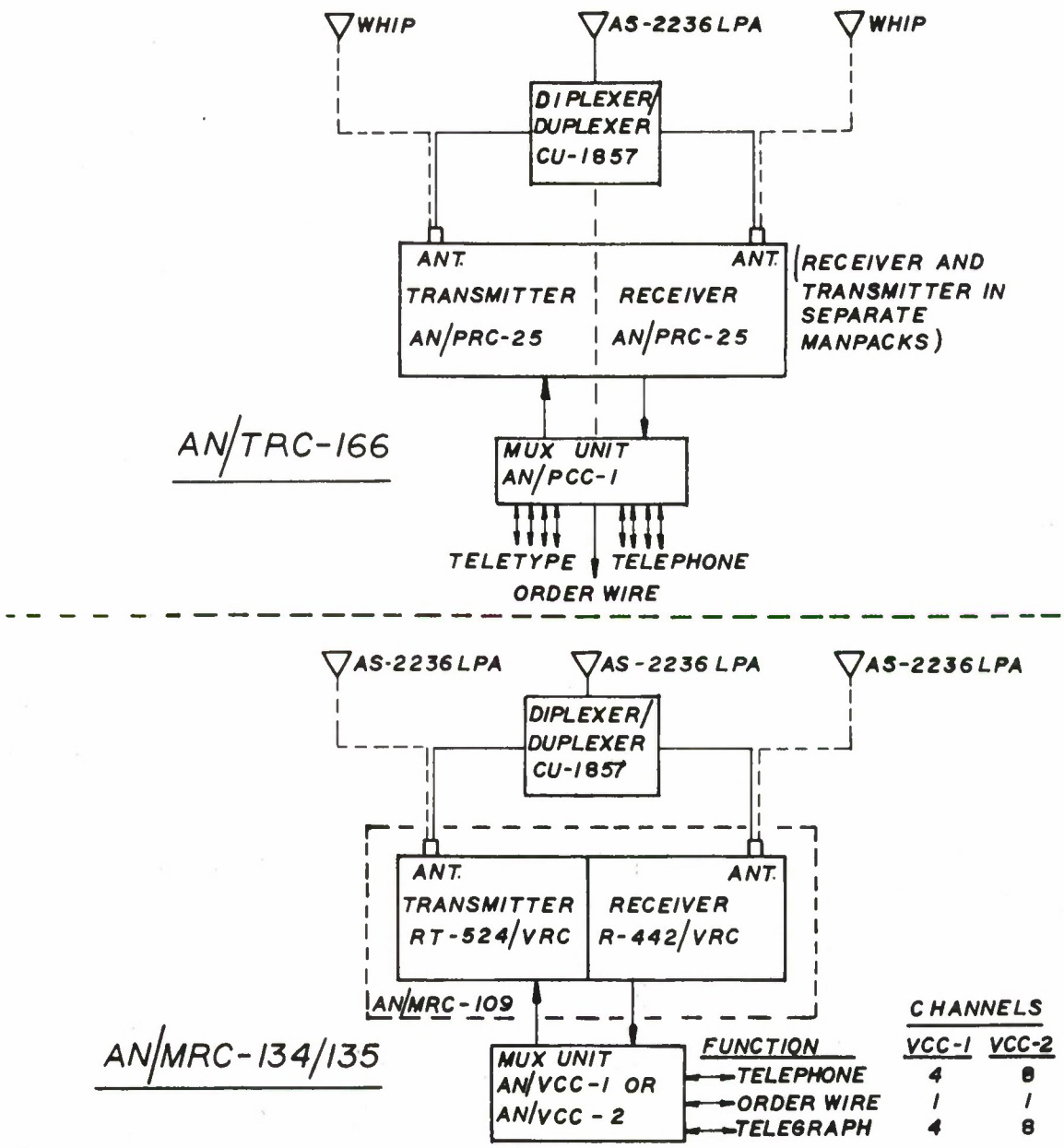


Figure 3-1. Overall Equipment Arrangement for AN/TRC-166 and AN/MRC-134/135

For several types of terrain and soil conditions and several equipment configurations, curves showing propagation path loss versus path length were also prepared.

Procedures that provide for the use of signal strength information and guardband requirements (as a function of signal strength) were formulated to assist field personnel in siting AN/TRC-166 and AN/MRC-134/135 communications equipment.

CONFIGURATION VARIATIONS

The equipment configurations shown in Figure 3-1 are representative of VHF-FM communications usage in the field. Two identical AN/TRC-166 sets were evaluated in a collocated situation with antenna separation distances of 25, 50 and 150 feet. The whip-to-whip case and the case of an LPA operating with a diplexer/duplexer were both examined.

Two identical AN/MRC-135 sets were also examined in a cosite situation, and again the antenna separation distances evaluated were 25, 50 and 150 feet. The LPA-to-LPA case was evaluated for both horizontal and vertical polarization, and the case of the LPA with a common diplexer/duplexer arrangement was included.

The maximum distance between antennas in the collocated situation (150 feet) is dictated by the 75 foot length of the cables servicing the antennas. The minimum practicable siting separation is 25 feet. The 50 foot separation distance was chosen as being representative of the average condition in the field.

Calculations were made for the equipment type, signal strength and separation distance combinations in TABLE 3-1.

MUTUAL INTERFERENCE CALCULATION

Basically the Mutual Interference "Table" (MI Table) is a condensation of the more familiar mutual interference "chart", which arrays all transmitter and receiver frequencies as coordinates of a graph, and designates unusable combinations with an "X" or other appropriate symbol. As a practical matter the "chart" is cumbersome because of the large number of frequency channels to be accommodated on such a graph: 920 points both horizontally and vertically. In effect the Table retains the vertical ordinate of the chart by listing the receiver frequencies in the left-hand column on a succession of pages; the horizontal dimension is collapsed to reasonable size by listing only those transmitter frequencies that are denied.

TABLE 3-1

EQUIPMENT, DISTANCE AND SIGNAL-TO-SENSITIVITY RATIOS FOR MUTUAL INTERFERENCE CALCULATION

Transmitter Equipment, Antenna and Polarization	Receiver Equipment, Antenna and Polarization	Signal-To-Sensitivity Ratio* (dB)	Separation Distance (Ft.)	Remarks
AN/TRC-165 WHIP (VERT)	AN/TRC-155 WHIP (VERT)	3	25 50 150	
		15	25 50 150	
		25	25 50 150	
		3		Same set Diplexer
		15		Same set Diplexer
		25		Same set Diplexer
AN/MRC-134 LPA (HOR & VERT) AN/VCC-1	AN/MRC-134 LPA (HOR & VERT) AN/VCC-1	3	25 50 150	
		15	25 50 150	
		25	25 50 150	
		3		Same set Diplexer
		15		Same set Diplexer
		25		Same set Diplexer
AN/MRC-135 LPA (VERT & HOR) AN/VCC-2	AN/MRC-135 LPA (VERT & HOR) AN/VCC-2	3	25 50 150	
		15	25 50 150	
		25	25 50 150	
		3		Same set Diplexer
		15		Same set Diplexer
		25		Same set Diplexer

The ECAC MI Table computer program is described in Reference 1. Inputs to the program include antenna characteristics, path loss, input signal-to-noise ratio, transmitter emission spectra, receiver selectivity data and operating frequencies. Cosite coupling loss values were calculated using the program in Reference 8. The coupling loss values are mean values determined under matched receiver, transmitter, and antenna impedance conditions. The standard deviations for each of the antenna configurations considered in this study are provided in TABLE 3-2.

TABLE 3-2

STANDARD DEVIATION OF COSITE COUPLING LOSS VALUES FOR DIFFERENT ANTENNA CONFIGURATIONS

Antenna		Standard Deviation (dB)
Transmitter	Receiver	
Whip	Whip	5.9
LPA (HOR.)	LPA (HOR.)	7.9
LPA (VERT.)	LPA (VERT.)	5.0

In working with the antenna configurations in the Table, small differences in coupling loss values can be expected for individual cases, and the effects of adjacent signal and spurious interactions in each case will, accordingly, vary slightly.

A Mutual Interference Table for the operation of two cosited AN/TRC-166 equipments, with marginal desired signal power, is presented in APPENDIX II. The calculations were based on the whip-to-whip antenna configuration (with AN/PCC-1 multiplexers, but no diplexers). The results in APPENDIX II were verified through spot check measurements as described in APPENDIX I.

A comparison of spot measured and predicted adjacent signal guardbands for two collocated AN/TRC-166 equipments is presented in TABLE 3-3. These measurements are consistent with the large volume of verification data contained in Reference 1.

TABLE 3-3

COMPARISON OF MEASURED AND PREDICTED GUARDBANDS FOR AN/TRC-166 OPERATION (DISTANCE SEPARATION 25 FT.)

Band of Operation	Input S/N (dB)	Adjacent Signal Guardband (MHz)	
		Predicted	Maximum Spot Measurement
LOW	3	5.65	3.25
	15	2.95	1.88
	25	1.8	1.3
HIGH	3	4.5	3.2
	15	2.2	1.0
	25	1.45	1.0

PATH LOSS CALCULATION

The models used to develop the propagation curves presented in APPENDIX III are described in detail in References 9, 10 and 11. The Longley-Rice model (Reference 9) calculates median transmission path loss values, as a function of path distance, for a large area surrounding a receiver. The path loss values calculated by the model for path lengths up to 40 km agree closely with measured all year median path loss values for similar path lengths. The model assumes that path loss values (dB) are normally distributed about the median, with a maximum standard deviation of 10 dB. The standard deviation for a given case is a function of frequency, distance, and terrain type. Minimum monthly mean values of surface refractivity are assumed.

The jungle propagation model derived in References 10 and 11 is a theoretical, slab-type model. Although it has been validated only for flat jungle terrain in Thailand (as reported in Reference 12), this model is considered to be the best available tool for calculating path loss in heavily forested environments. Its predictions agree closely with the short distance ground and sky wave propagation charts used successfully in the field by the U.S. Army Strategic Communications Command. However, the precise degree of confidence that can be placed in its predictions for varying terrain elevations and path lengths is unknown.

Input information required for the propagation models includes terrain type and terrain roughness. The various terrain types and soil conditions were categorized as in TABLE 1-1. The appropriate propagation model for each terrain category was used to calculate path loss as a function of path length for a variety of equipment configurations. The basic transmission path loss curves in APPENDIX III were plotted for frequencies of 47.75 MHz and 76 MHz. These frequencies were chosen because the propagation loss is greatest at the upper ends of the two operating bands.

FREQUENCY-DISTANCE SEPARATION

The amount of adjacent signal guardband protection a receiver requires in a cosite situation is a function of desired signal strength. With respect to a given communications path, desired signal strength, in turn, is a function of the distance between the desired signal transmitter and the receiver. The distance between the cosited interfering transmitter and the receiver can be plotted against the amount of guardband protection required if the desired signal strength is known. When this is done for three different desired signal levels (input S/R_s ratios of 3, 15 and 25 dB, corresponding to marginal, medium and strong signal cases, respectively), the results are frequency-distance (F-D) separation curves such as those in APPENDIX III. The curves are for application when communicating between AN/TRC-166 equipments or between AN/MRC-134/135 equipments, as indicated. Curves are provided for various combinations of equipment, multiplexer, antenna polarization and band of operation. The division lines between the sections of the curves represent the points at which the output $(S + I + N)/(I + N)$ ratio dropped to 10 dB.

FIELD OPERATING PROCEDURES

The most important consideration in establishing VHF communications in the field is to ensure that adjacent signal interference is avoided by observing the necessary guardband. If this can be done, interference-free communications will be possible most of the time.

Even greater reliability can be assured by avoiding operation of transmitters on the "denied frequencies" listed in the Mutual Interference Tables but, for rapid field use, the simplest way is to start by avoiding the adjacent signal problem.

The ingredients for solution are knowledge of path loss (and, therefore, of desired signal strength), and application of appropriate frequency-distance separation criteria to determine the guardband required for receiver protection. To this end, the procedures in APPENDIX III were developed.

APPENDIX I

AN/TRC-166 MEASUREMENT PROGRAM

GENERAL

Three kinds of measurement information were obtained with respect to the AN/TRC-166 equipment. First, the characteristics of the receiver in rejecting undesired signals near tuned frequency (adjacent signal phenomena) were examined in the laboratory. The data thus obtained were used as input information to the Mutual Interference Table program that produced the Mutual Interference Tables and the guardband required for the AN/TRC-166 equipment. Second, the spurious interaction predictions were spot checked in the laboratory in closed system (direct signal input-no antenna) tests. Finally, the guardband predictions were spot checked in the field using an open system (signal input via antenna) test setup.

ADJACENT SIGNAL CHARACTERISTICS

The test setup used to determine adjacent signal characteristics is depicted in Figure I-1. Two types of adjacent signal phenomena were examined viz.:

1. Off-frequency Rejection (OFR) provided by the receiver to transmitter fundamental power, or receiver response as a function of transmitter tuned frequency. (In this case the diplexer is notched to the receiver tuned frequency.)
2. The response of the receiver to transmitter noise and sideband emissions, also as a function of transmitter fundamental frequency. (In this case the diplexer is notched at the transmitter frequency.)

The adjacent signal measurements were obtained with respect to two receiver tuned frequencies, one each in the high and low operating bands (63.5 MHz and 39.9 MHz, respectively).

Both with and without the diplexer, the adjacent signal measurement procedure was essentially as follows:

1. The desired signal was fed into the receiver (with MUX) from a variable output signal generator and the level was adjusted until an output (S + N)/N ratio of 13 dB (corresponding to input S/R_s level of 3 dB) was observed by taking the difference in "set level" and "distortion level" readings on the HP 330 distortion analyzer display.

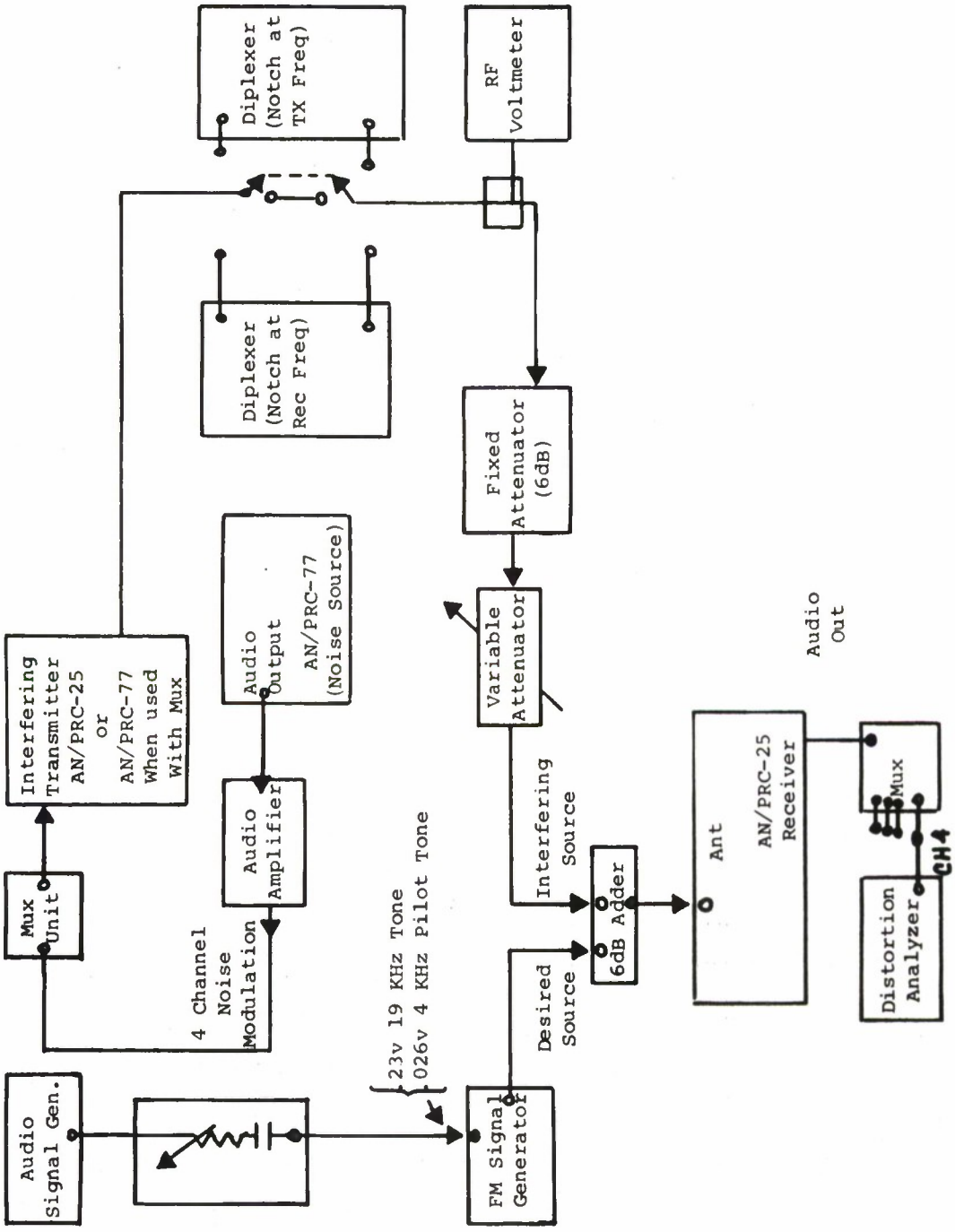


Figure I-1. Test Setup for Adjacent Signal Measurements

2. At a specific frequency separation, the interfering signal was fed from an AN/PRC-77 transmitter through a variable attenuator to the receiver. The interfering power level was increased until the output (S + I + N)/(I + N) ratio dropped to 10 dB.

3. The interference signal power was recorded.

4. Steps 1, 2, and 3 were repeated at several frequency separations.

Figure I-2 contains OFR curves for the low band case (f_o = 39.9 MHz). Three curves are shown for three uses of the diplexer, as indicated.

SPURIOUS FREQUENCY SPOT CHECKS

Spurious responses, predicted by the Mutual Interference (MI) Table program for the AN/TRC-166 equipment in both high and low operating bands, were spot-checked by laboratory measurements using the set up shown in Figure I-3. A noise-modulated AN/PRC-77 transmitter (Output power = 37 dBm), attenuated 40 dB by a diplexer, was used as the interfering signal source.

TABLES I-1 through I-7 contain the measured results for seven different receiver tuned frequencies. At each receiver tuned frequency, several undesired signal frequencies were chosen, corresponding to the frequencies that the MI Table program predicted would evoke a spurious response. At each interfering signal frequency three desired signal levels were used (S/R_s ratios of 3, 15 and 25 dB). In the last three columns of each table, an "X" indicates that the desired signal was obliterated by the interfering signal. A blank signifies that the level of the interfering signal at the frequency indicated was not high enough to reduce the (S + I + N)/(I + N) output ratio to 10 dB. In marginal cases, the actual (S + I + N)/(I + N) ratio is indicated in parentheses.

ADJACENT GUARDBAND SPOT CHECKS

The MI Table program predictions of adjacent signal guardbands for the AN/TRC-166 equipment were spot-checked in the field, using the measurement set up shown in Figure I-4. The guardbands, as predicted, provide protection not only against adjacent signal phenomena, but also against spurious emissions and spurious responses that are close to the receiver tuned frequency.

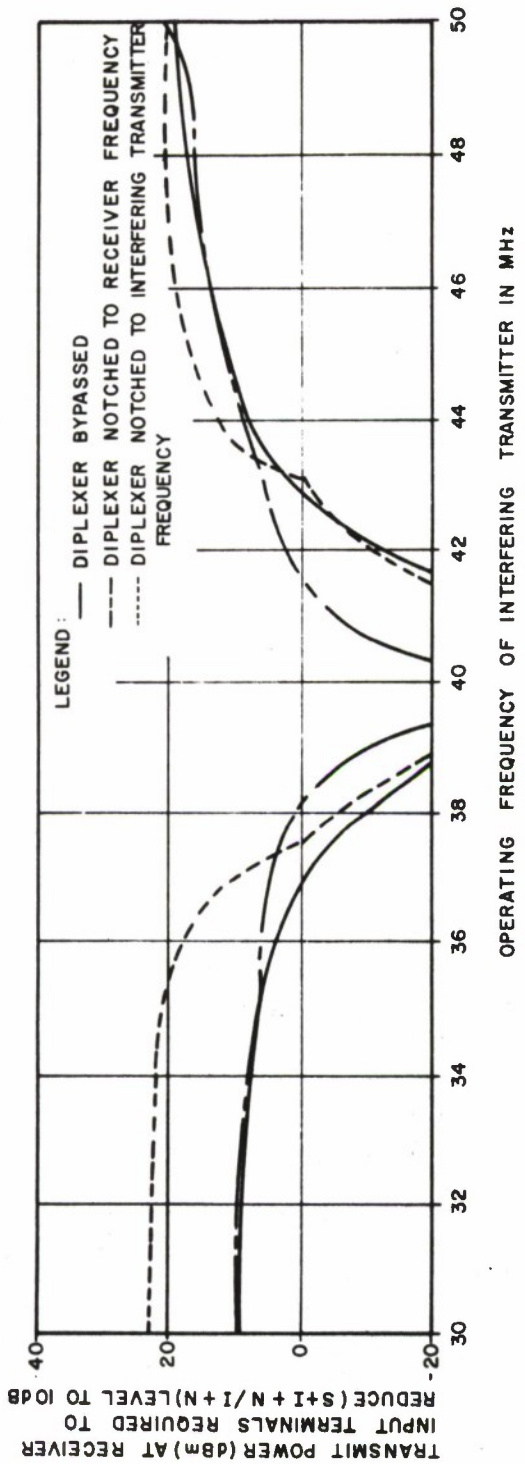


Figure I-2. AN/PRC-25 Off Frequency Rejection Characteristics for Receiver Frequency (f_o = 39.9 MHz)

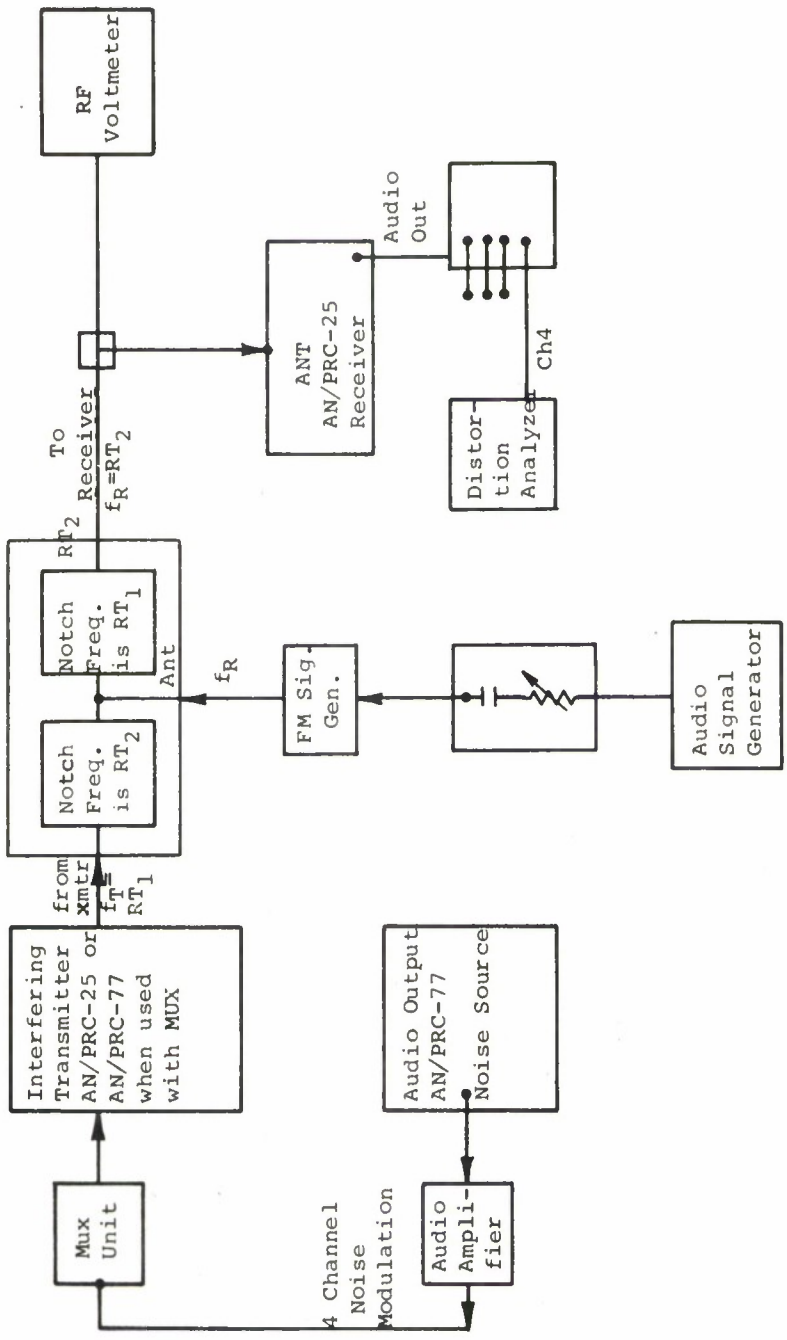


Figure I-3. Closed System Spurious Emission and Response Validation Test Setup

TABLE I-1

AN/TRC-166 VALIDATION MEASUREMENT RESULTS

R_x Tuned Frequency = 40 MHz
Interfering Signal Strength = – 3 dBm
X = 10 dB or less (S + I + N)/(I + N), or intolerable interference

Interference Frequency (MHz)	Desired Signal Power Above Sensitivity, S/R_s 3 dB	15 dB	25 dB
31.45			
32.40	X (10)		
36.20	X	X (10)	
36.25	X	(11)	
37.15	X (9)		
37.20	X (10)		
42.30	X (7)		
42.90	X (10)		
43.10	X (10)		
43.45			
47.65	X (8.5)		
48.65	X (8.5)		
48.85	X (7)		
51.45	X (7)		
51.55	X (9)		
54.60			
60.40			
62.90			
63.10	(10.5)		
74.60			

TABLE I-2

MUX SITING VALIDATION MEASUREMENT RESULTS

R_x Tuned Frequency = 46 MHz
Interfering Signal Strength = −3 dB
X = 10 dB or less (S + I + N)/(I + N), or intolerable interference

Interference Frequency (MHz)	Desired Signal Power Above Sensitivity, S/R_s 3 dB	15 dB	25 dB
30.60			
34.15			
34.40			
34.45			
34.55			
38.25	X		
40.20	X		
42.10	X	X (10)	
43.40	X	X	
48.25	X	X (8)	
48.85	X	X (9)	
51.65	X (5)		
51.85	X (6)		
53.65	X	X	
57.45			
57.55	X (7)		
57.60	X (7)		
63.40	X (9)		
68.90			
69.10			

TABLE I-3

MUX SITING VALIDATION MEASUREMENTS

R_x Tuned Frequency = 48.75 MHz
Interfering Signal Strength = −3 dBm
X = 10 dB or less (S + I + N)/(I + N), or intolerable interference

Interference Frequency (MHz)	Desired Signal Power Above Sensitivity, S/R_s 3 dB	15 dB	25 dB
30.1	X	X (9)	
31.4			
31.5			
35.35			
35.85	X		
37.3	X (7)		
39.15	X (9)		
41.55	X (9)		
43.95	X (8)		
45.55			
51.25	X (9)		
52.25	X (7)		
53.00	X (10)		
53.25	X (6)		
56.4	X (10)		
59.00	X (6)		
60.2			
60.3			
64.75			
71.65			
71.85			

TABLE I-4

MUX SITING VALIDATION MEASUREMENTS

R_x Tuned Frequency = 54 MHz
Interfering Signal Strength = −3 dBm
X = 10 dB or less (S + I + N)/(I + N), or intolerable interference

Interference Frequency (MHz)	Desired Signal Power Above Sensitivity, S/R_s 3 dB	15 dB	25 dB
30.9			
31.1			
32.7	X (10)		
33.25	X (9)		
36.7			
37.1			
38.45			
40.9			
42.55			
44.2			
46.3			
48.2			
48.65			
49.9			
50.2			
51.45			
52.1	X (10)		
55.85	X (5)		
55.95	X (7)		
56.25	X	X	X
56.35	X (7)		
57.15			
57.9			
60.45			
61.6			
65.45			
65.55			

TABLE I-5

MUX SITING VALIDATION MEASUREMENTS

R_x Tuned Frequency = 57.5 MHz
Interfering Signal Strength = –3 dBm
X = 10 dB or less (S + I + N)/(I + N), or intolerable interference

Interference Frequency (MHz)	Desired Signal Power Above Sensitivity, S/R_s 3 dB	15 dB	25 dB
30.6			
34.4	X (9)		
34.45	X (8)		
34.6	X (5)		
38.25			
40.2			
42.05			
45.95			
46.05			
49.8	X		
51.65	X		
51.75	X		
52.85	X		
54.00	X		
54.55	X		
54.9	X		
55.55	X (10)		
56.1	X		
59.35	X		
60.0	X		
60.35	X		
60.75	X (8.5)		
60.9			
62.05	X (10)		
63.15			
63.35			
68.95			

TABLE I-6

MUX SITING VALIDATION MEASUREMENTS

R_x Tuned Frequency = 67.5 MHz
Interfering Signal Strength = −3 dB
X = 10 dB or less (S + I + N)/(I + N), or intolerable interference

Interference Frequency (MHz)	Desired Signal Power Above Sensitivity, S/R_s 3 dB	15 dB	25 dB
33.15	X		
33.7	X	X	
33.75	X	X	X
33.8	X	X	X (8)
33.95	X		
37.75	X	X	X
39.45	X		
41.6	X		
44.4	X		
44.6	X		
45.2	X (6)		
45.4	X (10)		
50.2			
50.9			
55.95			
56.85	X	X	X
59.8	X		
61.75	X	X	X
62.6	X	X	X
63.35	X	X	X
63.45	X	X	X
64.4	X	X	
64.8	X	X	
65.6	X	X (5)	
66.00	X	X (10)	
69.45	X	X	

TABLE I-7

MUX SITING VALIDATION MEASUREMENTS

R_x Tuned Frequency = 69 MHz
Interfering Signal Strength = −3 dB
X = 10 dB or less (S + I + N)/(I + N), or intolerable interference

Interference Frequency (MHz)	Desired Signal Power Above Sensitivity, S/R_s 3 dB	15 dB	25 dB
34.45	X	X	X
34.5	X	X	X
34.55	X	X	X
34.65	X	X	X
38.25	X	X	X
40.2	X		
42.1	X		
45.9	X (7)		
45.95	X (7)		
46.1	X (9)		
51.65	X (10)		
51.7	X (10)		
57.45	X		
57.6			
61.3	X	X	X
63.25	X	X	X
63.35	X	X	X
64.35	X	X	X
65.1	X	X	X (10)
66.65	X	X	
71.25	X	X	
71.5	X	X (7)	
72.75	X	X	X (6)
73.55	X	X	
74.7	X	X	X (10)
74.9	X		

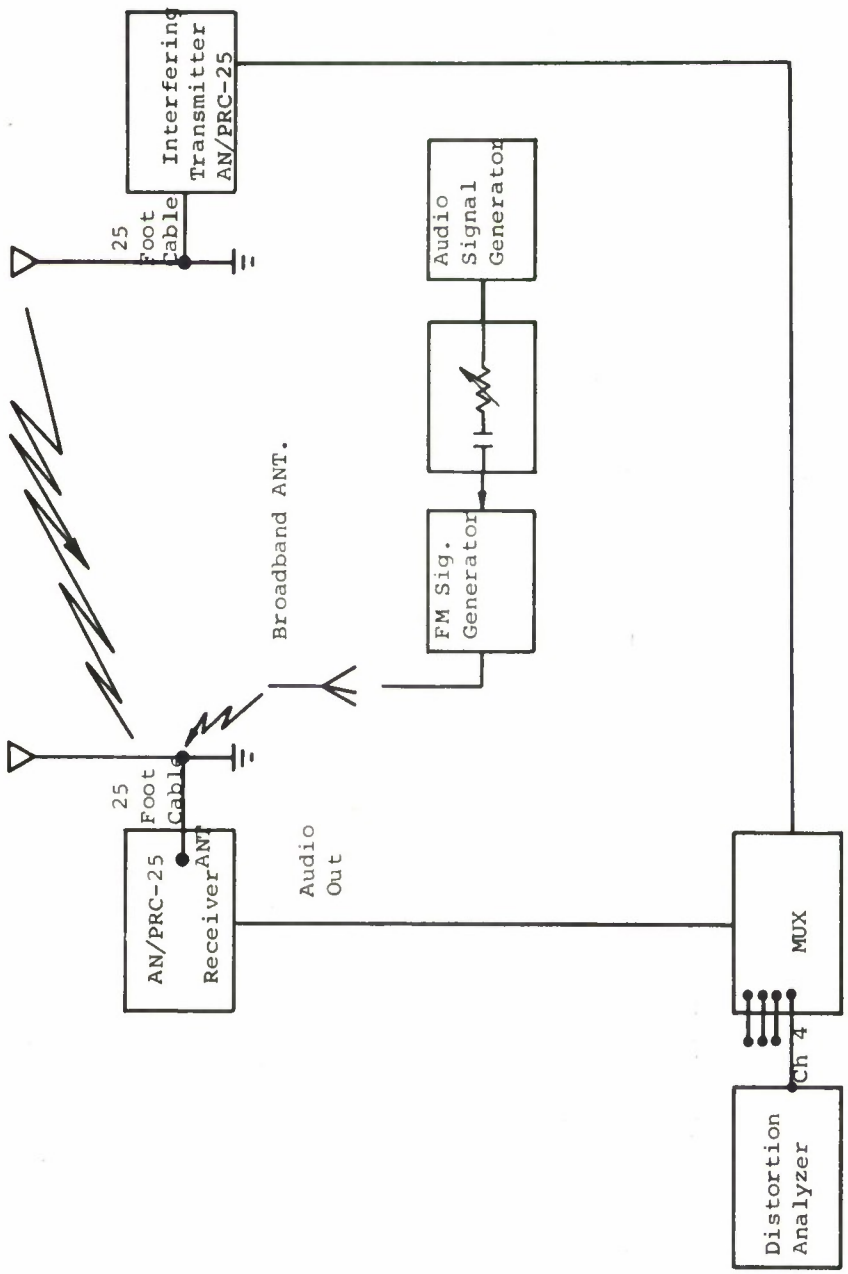


Figure I-4. Open System Adjacent Signal Guardband Validation Test Setup

The measurement procedures were similar to those used in the laboratory to check spurious responses, with two significant differences:

1. Signals were fed to the receiver through its normal antenna (open system), and
2. The interfering signal source was an unmodulated carrier.

As in the case of the spurious response checks, three levels of desired signal were checked in each case, corresponding to input S/R_s ratios of 3, 15 and 25 dB. The guardbands boundaries were established where the output $(S + I + N)/(I + N)$ ratios dropped to 10 dB. For this condition, the desired and undesired signal levels were approximately equal in the passband of the receiver.

Predicted guardbands were spot-checked with measurements for three frequencies in the low band and three frequencies in the high band. Three signal levels (S/R_s = 3 dB, 15 dB and 25 dB) were checked at each frequency. In all cases the measurements were inside of the guardband limits.

Figures I-5 through I-12 are plots of receiver output $(S + I + N)/(I + N)$ ratio versus interference frequency separation for three levels of desired signal. The discontinuities in the curves on both sides of the receiver tuned frequency, are the result of strong nearby spurious emissions and responses.

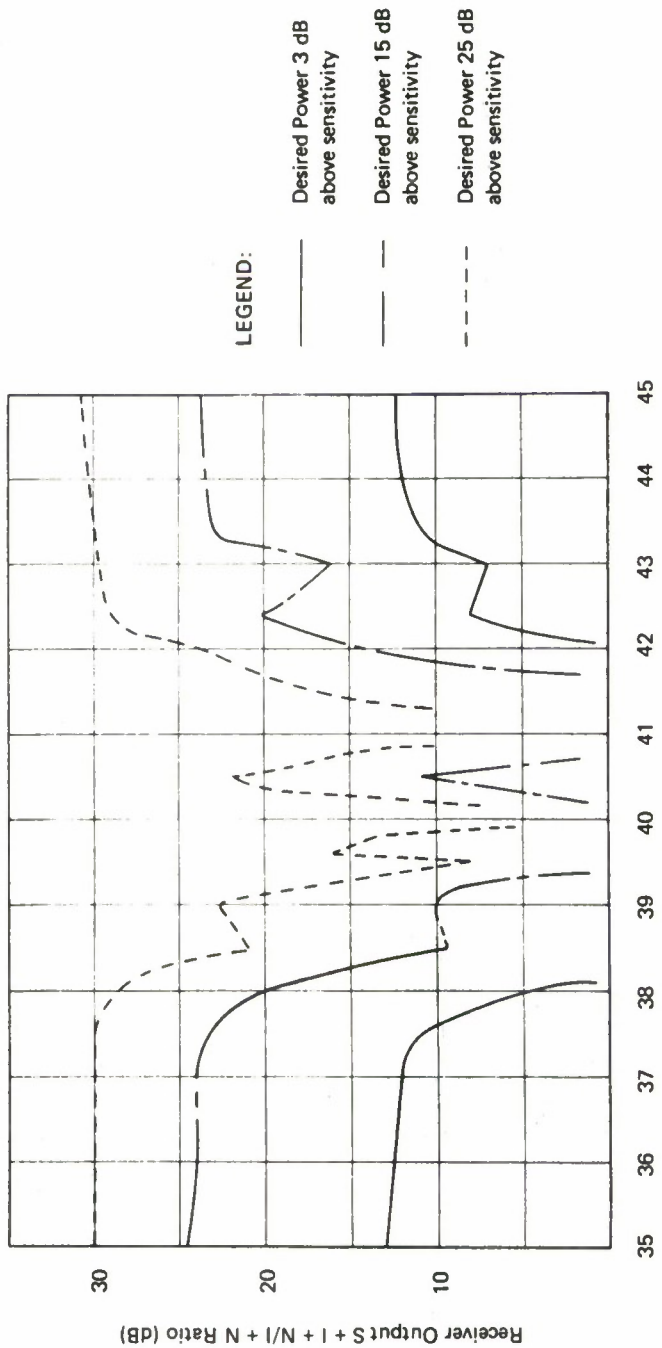


Figure I-5. AN/PRC-25 Adjacent Signal Characteristics for Receiver Frequency (f_o = 40 MHz) (Interfering Signal was from AN/PRC-25 Separated by 25 Feet)

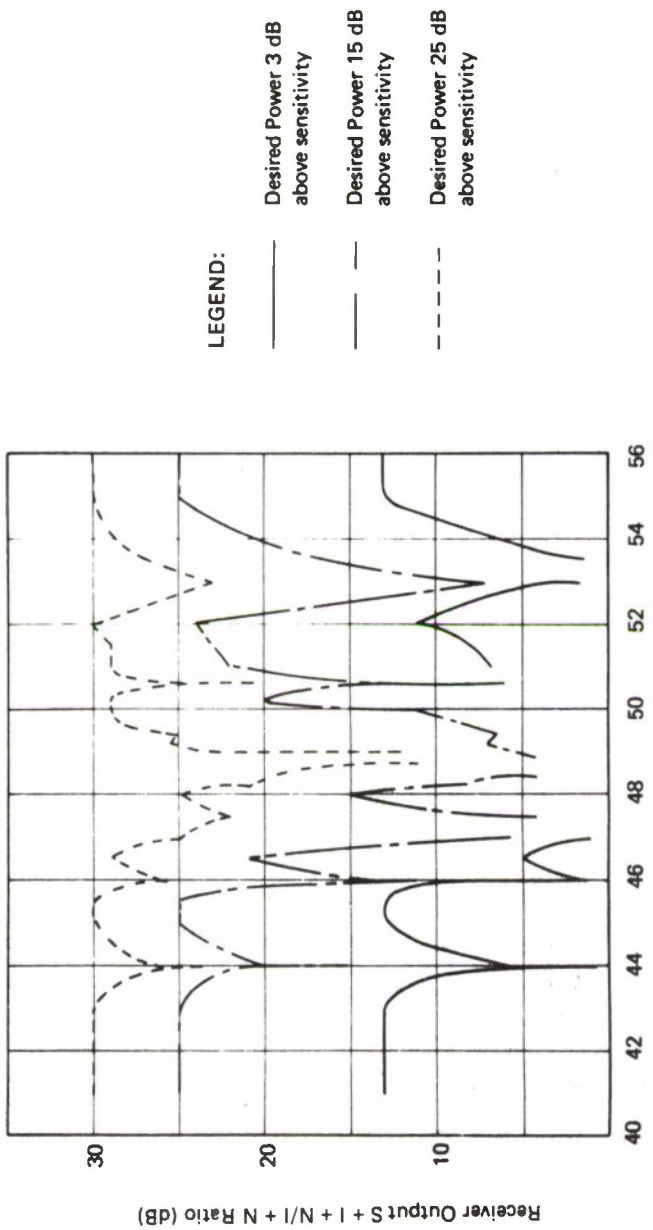


Figure I-6. AN/PRC-25 Adjacent Signal Characteristics for Receiver Frequency (f_o = 48.75 MHz) (Interfering Signal was from AN/PRC-25 Separated by 25 Feet)

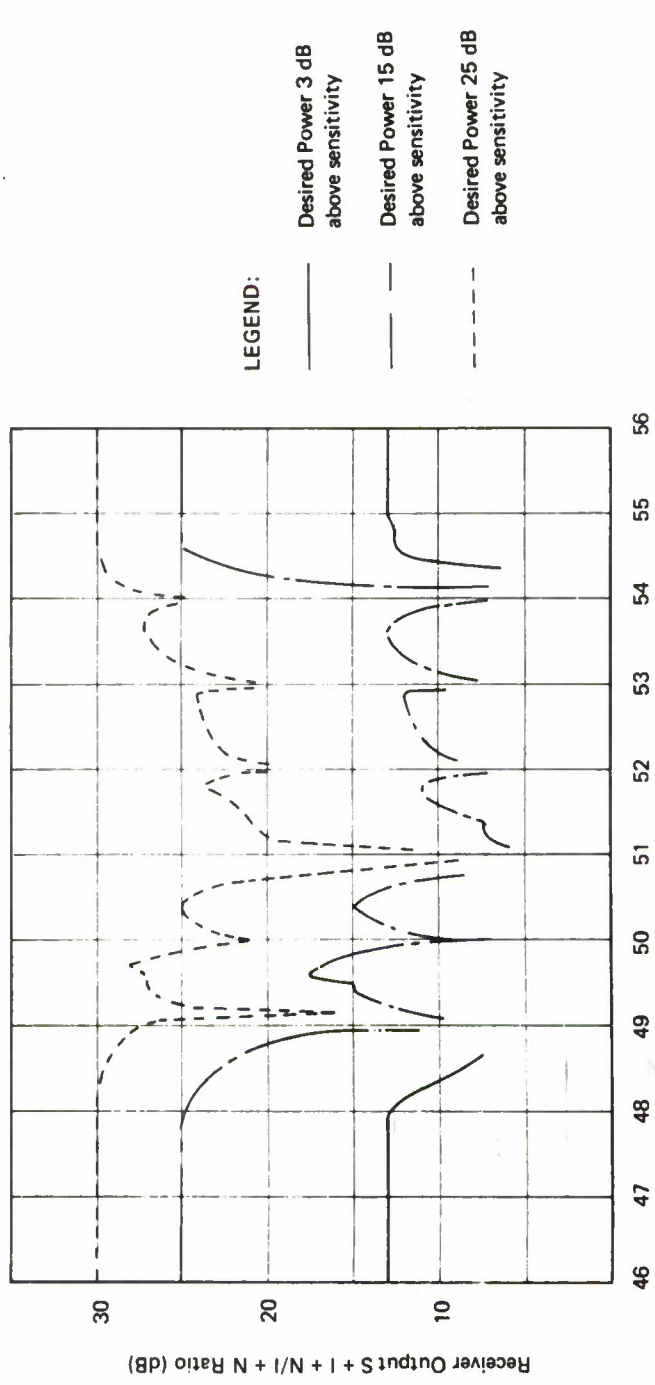


Figure I-7. AN/PRC-25 Adjacent Signal Characteristics for Receiver Frequency (f_o = 51 MHz) (Interfering Signal was from AN/PRC-25 Separated by 25 Feet)

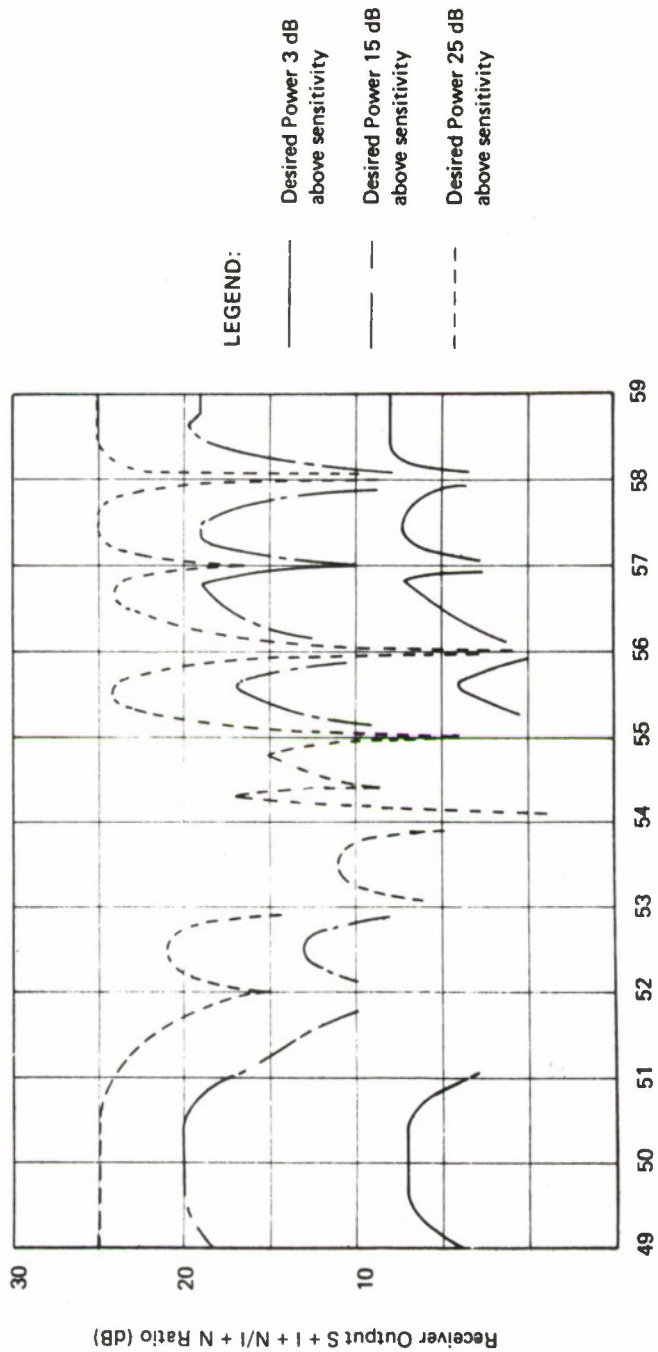


Figure I-8. AN/PRC-25 Adjacent Signal Characteristics for Receiver Frequency (f_o = 54 MHz) (Interfering Signal was from AN/PRC-25 Separated by 25 Feet)

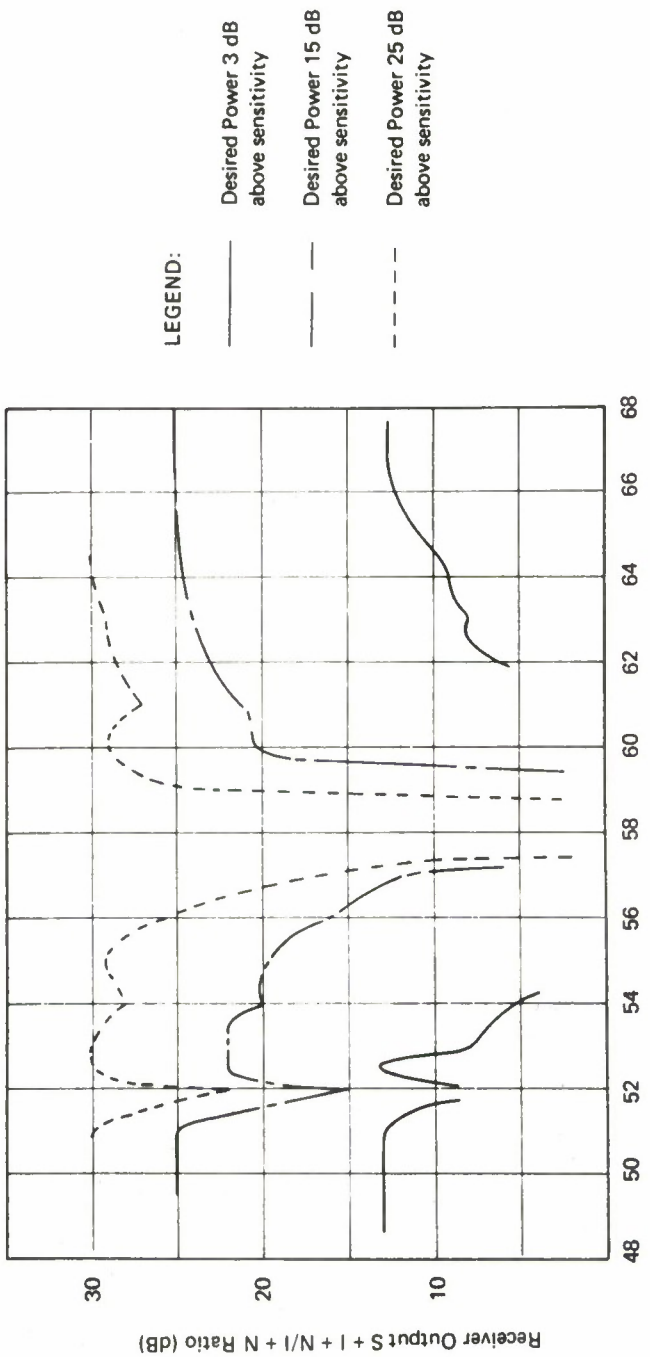


Figure I-9. AN/PRC-25 Adjacent Signal Characteristics for Receiver Frequency (f_o = 57.75 MHz) (Interfering Signal was from AN/PRC-25 Separated by 25 Feet)

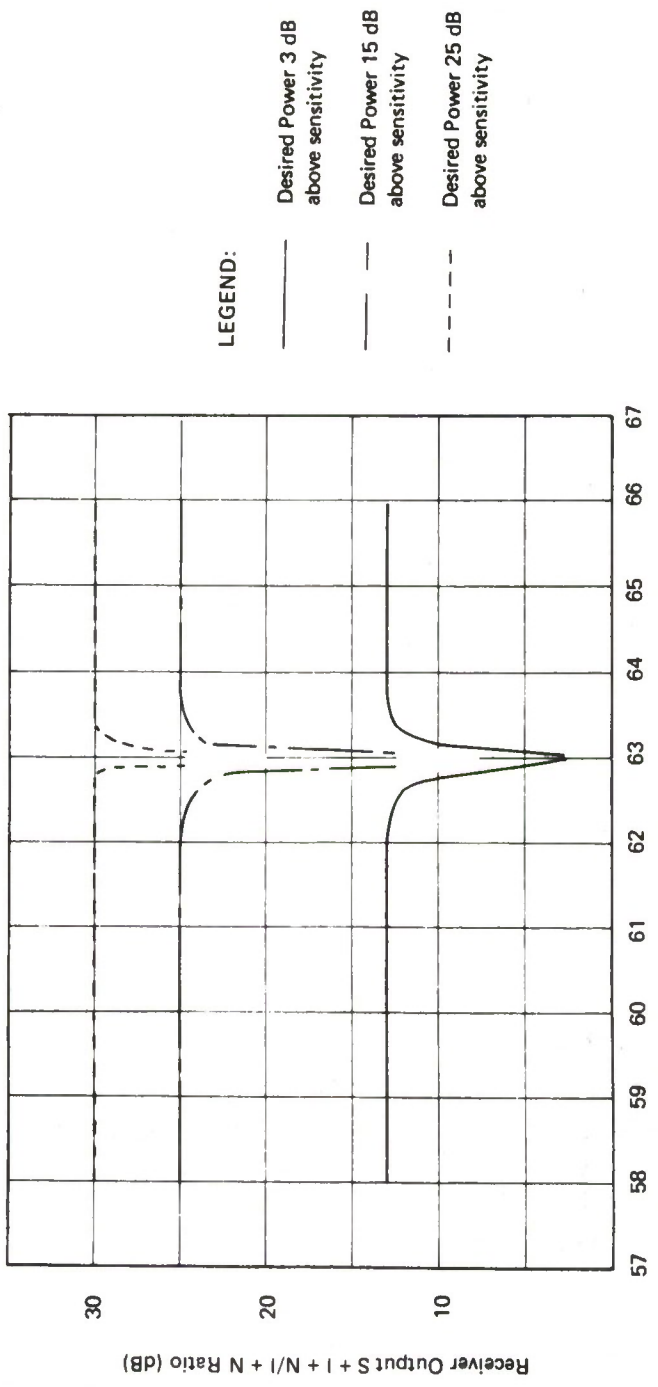


Figure I-10. AN/PRC-25 Adjacent Signal Characteristics for Receiver Frequency (f_o = 63 MHz) (Interfering Signal was from AN/PRC-25 Separated by 25 Feet)

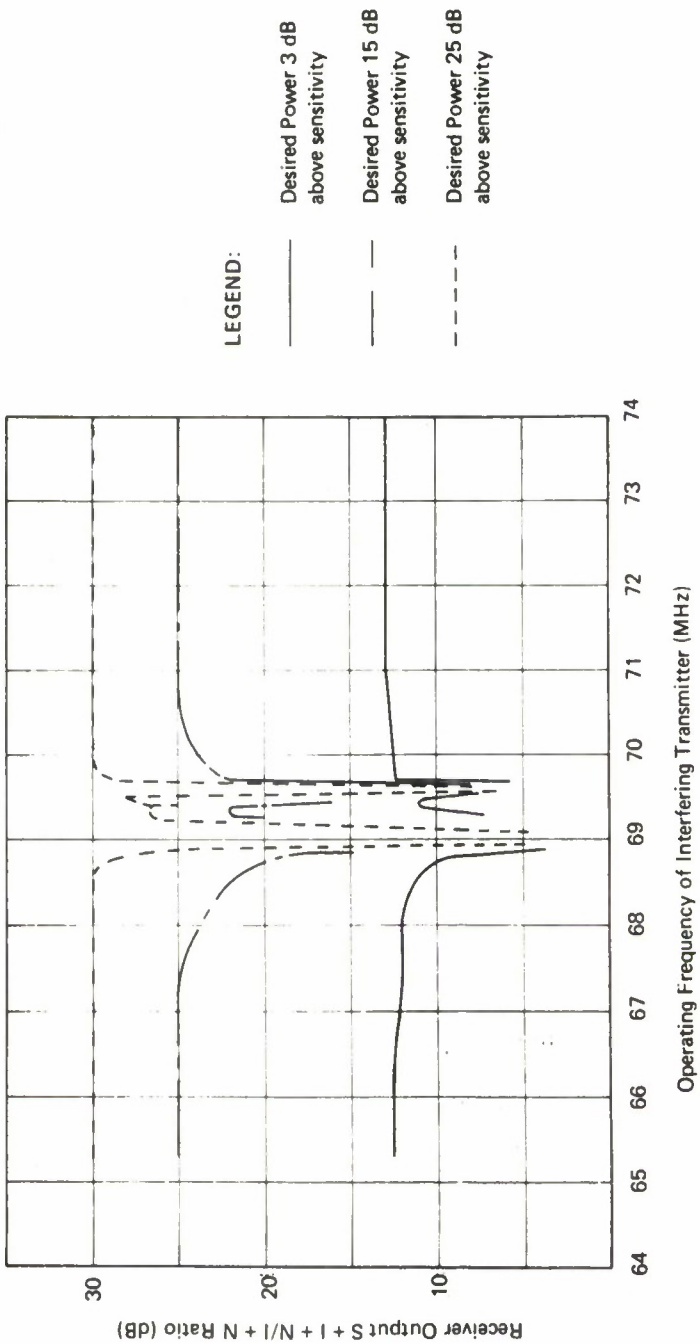


Figure I-11. AN/PRC-25 Adjacent Signal Characteristics for Receiver Frequency (f_o = 69 MHz) (Interfering Signal was from AN/PRC-25 Separated by 25 Feet)

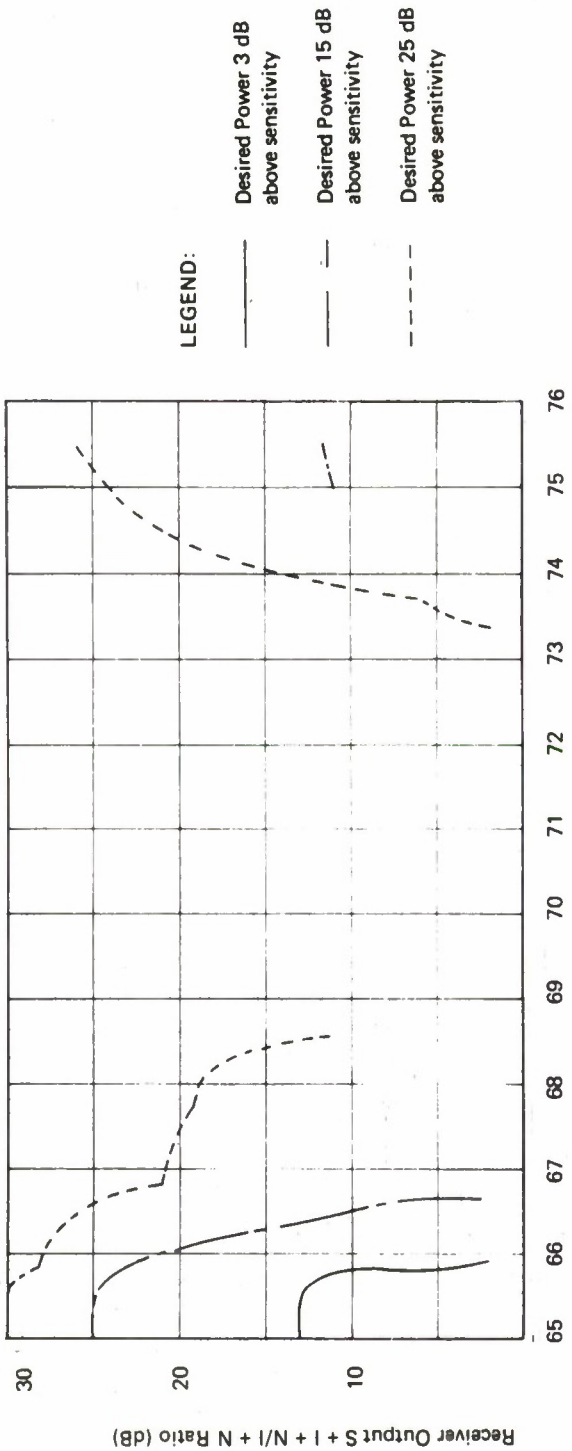


Figure I-12. AN/PRC-25 Adjacent Signal Characteristics for Receiver Frequency (f_o = 69.3 MHz) (Interfering Signal was from AN/PRC-25 Separated by 25 Feet)

APPENDIX II

AN/TRC-166 MUTUAL INTERFERENCE TABLE AND AN/MRC-134/135 SPURIOUS INTERACTION NOMOGRAM

AN/TRC-166 MUTUAL INTERFERENCE TABLE

The Mutual Interference Table in this appendix (TABLE II-1) is for use when two or more AN/TRC-166 transceivers are operated simultaneously in a cosited situation. The most important aspect of choosing frequencies for operating the AN/TRC-166 in a cosited situation is the observance of appropriate guardbands to avoid adjacent signal phenomena (see APPENDIX III). For each receiver tuned frequency, the mutual interference chart identifies additonal transmitter frequencies, outside of the appropriate guardbands, that should be avoided if interference continues after the guardbands are applied.

The accompanying MI Table is based on conservative criteria, in that marginal desired signal levels are assumed. Specifically, all calculations are based on an input signal-to-receiver sensitivity (S/R_s) ratio of 3 dB.

To use the Table, simply look up the tuned frequency of the receiver in the left hand column and read across to identify transmitter frequencies that should not be used. The Table heading is self-explanatory.

AN/MRC-134/135 SPURIOUS RESPONSE NOMOGRAM

Background

The 24 AN/MRC-134/135 Mutual Interference Tables that were provided to the Marine Corps previously as part of Reference 1 were calculated for marginal desired signal conditions ($S/R_s = 3$ dB). As part of this project, the spurious responses in the AN/MRC-134/135 receivers were examined to determine the effect of stronger desired signals. Accordingly, input S/R_s ratios of 15 dB (medium strength signals) and 25 dB (strong signals) were used.

As might be expected, most of the frequencies that were denied to a collocated transmitter under marginal desired signal conditions were usable when the desired signals were of medium strength or stronger. The denied frequency list

TABLE II-1

MUTUAL INTERFERENCE TABLE (Sheet 1 of 23)

TX TYPE: AN/TRC-166

TX MULTIPLEXER: AN/PCC-1

TX ANTENNA(NO DIPLEXER): WHIP

RX TYPE: AN/TRC-166

RX MULTIPLEXER: AN/PCC 1

RX ANTENNA(NO DIPLEXER): WHIP

RCVR. FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)										
30.00	31.25	32.20	32.70	37.70	41.25	43.45	50.15	52.70	53.10	55.40	64.40
30.05	31.50	32.20	32.90	37.95	41.50	43.65	50.10	52.95	53.15	55.40	64.65
30.10	31.50	32.25	32.95	37.95	41.55	43.70	50.05	53.00	53.20	55.45	64.70
30.15	31.55	32.25	32.95	38.00	41.60	43.70	50.00	53.05	53.25	55.45	64.75
30.20	31.60	32.30	32.95	38.00	41.65	43.75	49.95	53.10	53.30	55.50	64.80
30.25	31.60	32.30	33.00	38.05	41.70	43.75	49.90	53.15	53.35	55.50	64.85
30.30	31.65	32.35	33.00	38.05	41.75	43.80	49.85	53.20	53.40	55.55	64.90
30.35	31.70	32.35	33.00	38.10	41.80	43.80	49.80	53.25	53.45	55.55	64.95
30.40	31.70	32.35	33.05	38.10	41.85	43.85	49.75	53.30	53.50	55.60	65.00
30.45	31.75	32.40	33.05	38.15	41.90	43.85	49.70	53.35	53.55	55.60	65.05
30.50	31.80	32.45	33.05	38.15	41.95	43.90	49.65	53.40	53.60	55.65	65.10
30.55	31.80	32.45	33.10	38.20	42.00	43.90	49.60	53.45	53.65	55.65	65.15
30.60	31.85	32.50	33.10	38.20	42.05	43.95	49.55	53.50	53.70	55.70	65.20
30.65	31.90	32.50	33.10	38.25	42.10	43.95	49.50	53.55	53.75	55.70	65.25
30.70	31.90	32.55	33.15	38.25	42.15	44.00	49.45	53.60	53.80	55.75	65.30
30.75	31.95	32.55	33.15	38.30	42.20	44.00	49.40	53.65	53.85	55.75	65.35
30.80	32.00	32.60	33.15	38.30	42.25	44.05	49.35	53.70	53.90	55.80	65.40
30.85	32.00	32.60	33.20	38.35	42.30	44.05	49.30	53.75	53.95	55.80	65.45
30.90	32.05	32.60	33.20	38.35	42.35	44.10	49.25	53.80	54.00	55.85	65.50
30.95	32.10	32.65	33.20	38.40	42.40	44.10	49.20	53.85	54.05	55.85	65.55
31.00	32.10	32.70	33.25	38.40	42.45	44.15	49.15	53.90	54.10	55.90	65.60
31.05	32.15	32.70	33.25	38.45	42.50	44.15	49.10	53.95	54.15	55.90	65.65
31.10	32.20	32.75	33.25	38.45	42.55	44.20	49.05	54.00	54.20	55.95	65.70
31.15	32.20	32.75	33.30	38.50	42.60	44.20	49.00	54.05	54.25	55.95	65.75
31.20	32.25	32.80	33.30	38.50	42.65	44.25	48.95	54.10	54.30	56.00	65.80

TABLE II-1 (Sheet 2 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)									
31.25	32.30	32.80	33.30	38.55	42.70	44.25	48.90	54.15	54.35	54.00	65.85	
31.30	32.30	32.85	33.35	38.55	42.75	44.30	48.85	54.20	54.40	54.05	65.90	
31.35	30.45	32.35	32.85	33.35	38.60	42.80	44.30	48.80	54.25	54.45	54.05	65.95
31.40	32.40	32.85	33.35	38.60	42.85	44.35	48.75	54.30	54.50	54.10	66.00	
31.45	30.50	32.40	32.90	38.40	38.65	42.90	44.35	48.70	54.35	54.55	54.10	66.05
31.50	30.55	32.45	32.95	33.40	38.65	42.95	44.40	48.65	54.40	54.60	54.15	66.10
31.55	32.50	32.95	33.40	38.70	43.00	44.40	48.60	54.45	54.65	54.15	66.15	
31.60	30.60	32.50	33.00	33.45	38.70	43.05	44.45	48.55	54.50	54.70	54.20	66.20
31.65	30.65	32.55	33.00	33.45	38.75	43.10	44.45	48.50	54.55	54.75	54.20	66.25
31.70	33.05	33.45	38.75	43.15	44.50	48.45	54.60	54.80	56.25	66.30		
31.75	30.70	33.05	33.50	38.80	43.20	44.50	48.40	54.65	54.85	54.25	66.35	
31.80	30.75	33.10	33.50	38.80	43.25	44.55	48.35	54.70	54.90	54.30	66.40	
31.85	33.10	33.50	38.85	43.30	44.55	48.30	54.75	54.95	54.30	66.45		
31.90	30.80	33.10	33.55	38.85	43.35	44.60	48.25	54.80	55.00	54.35	66.50	
31.95	33.15	33.55	38.90	43.40	44.60	48.20	54.85	55.05	54.35	66.55		
32.00	33.20	33.55	38.90	43.45	44.65	48.15	54.90	55.10	54.40	66.60		
32.05	33.20	33.60	38.95	43.50	44.65	48.10	54.95	55.15	54.40	66.65		
32.10	33.25	33.60	38.95	43.55	44.70	48.05	55.00	55.20	54.45	66.70		
32.15	33.25	33.60	39.00	43.60	44.70	48.00	55.05	55.25	54.45	66.75		
32.20	33.30	33.65	39.00	43.65	44.75	47.95	55.10	55.30	54.50	66.80		
32.25	31.35	33.30	33.65	39.05	43.70	44.75	47.90	55.15	55.35	54.50	66.85	
32.30	33.35	33.65	39.05	43.75	44.80	47.85	55.20	55.40	54.55	66.90		
32.35	33.35	33.70	39.10	43.80	44.80	47.80	55.25	55.45	54.55	66.95		
32.40	33.35	33.70	39.10	43.85	44.85	47.75	55.30	55.50	54.60	67.00		
32.45	33.40	33.70	39.15	43.90	44.85	47.70	55.35	55.55	54.60	67.05		
32.50	33.45	33.75	39.15	43.95	44.90	47.65	55.40	55.60	54.65	67.10		
32.55	33.45	33.75	39.20	44.00	44.90	47.60	55.45	55.65	54.65	67.15		
32.60	33.75	39.20	44.05	44.95	47.55	55.50	55.70	54.70	67.20			
32.65	33.80	39.25	44.10	44.95	47.50	55.55	55.75	54.70	67.25			
32.70	30.00	33.80	39.25	44.15	45.00	47.45	55.60	55.80	54.75	67.30		
32.75	30.00	33.80	39.30	44.20	45.00	47.40	55.65	55.85	54.75	67.35		
32.80	30.00	33.85	39.30	44.25	45.05	47.35	55.70	55.90	54.80	67.40		
32.85	30.05	33.85	39.35	44.30	45.05	47.30	55.75	55.95	54.80	67.45		
32.90	30.05	33.85	39.35	44.35	45.10	47.25	55.80	54.00	54.85	67.50		
32.95	30.05	33.90	39.40	44.40	45.10	47.20	55.85	54.05	54.85	67.55		
33.00	30.10	33.90	39.40	44.45	45.15	47.15	55.90	54.10	54.90	67.60		
33.05	30.10	39.45	44.50	45.15	47.10	55.95	54.15	54.90	67.65			
33.10	30.10	39.45	44.55	45.20	47.05	54.00	54.20	54.95	67.70			
33.15	30.15	39.50	44.60	45.20	47.00	54.05	54.25	54.95	67.75			
33.20	30.15	39.50	44.65	45.25	46.95	54.10	54.30	57.00	67.80			
33.25	30.15	39.55	44.70	45.25	46.90	54.15	54.35	57.00	67.85			
33.30	30.20	39.55	44.75	45.30	46.85	54.20	54.40	57.05	67.90			
33.35	30.20	39.60	44.80	45.30	46.80	54.25	54.45	57.05	67.95			
33.40	30.20	39.60	44.85	45.35	46.75	54.30	54.50	57.10	68.00			
33.45	30.25	39.65	44.90	45.35	46.70	54.35	54.55	57.10	68.05			
33.50	30.25	39.65	44.95	45.40	46.65	54.40	54.60	57.15	68.10			
33.55	30.25	32.65	39.70	45.00	45.40	46.60	54.45	54.65	57.15	66.15		
33.60	30.30	39.70	45.05	45.45	46.55	54.50	54.70	57.20	68.20			

TABLE II-1 (Sheet 3 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)								
33.65	30.30	39.75	45.10	45.45	46.50	56.55	56.75	57.20	68.25
33.70	30.30	39.75	45.15	45.50	46.45	56.60	56.80	57.25	68.30
33.75	30.35	39.80	45.20	45.50	46.40	56.65	56.85	57.25	68.35
33.80	30.35	39.80	45.25	45.55	46.35	56.70	56.90	57.30	68.40
33.85	30.35	39.85	45.30	45.55	46.30	56.75	56.95	57.30	68.45
33.90	30.40	39.85	45.35	45.60	46.25	56.80	57.00	57.35	68.50
33.95	30.40	39.90	45.40	45.60	46.20	56.85	57.05	57.35	68.55
34.00	30.40	39.90	45.45	45.65	46.15	56.90	57.10	57.40	68.60
34.05	30.45	39.95	45.50	45.65	46.10	56.95	57.15	57.40	68.65
34.10	30.45	39.95	45.55	45.70	46.05	57.00	57.20	57.45	68.70
34.15	30.45	40.00	45.60	45.70	46.00	57.05	57.25	57.45	68.75
34.20	30.50	40.00	45.60	45.75	45.95	57.10	57.30	57.50	68.80
34.25	30.50	40.05	45.70	45.75	45.90	57.15	57.35	57.50	68.85
34.30	30.50	40.05	45.75	45.80	45.85	57.20	57.40	57.55	68.90
34.35	*****ALL TX CHANNELS DENIED*****								
34.40	30.55	40.10	45.75	45.85	57.30	57.60	57.60	69.00	
34.45	30.55	40.15	45.70	45.85	45.90	57.35	57.65	57.60	69.05
34.50	30.60	40.15	45.65	45.90	45.95	57.40	57.60	57.65	69.10
34.55	30.60	40.20	45.60	45.90	46.00	57.45	57.65	69.15	
34.60	30.60	40.20	45.55	45.95	46.05	57.50	57.70	69.20	
34.65	30.65	40.25	45.50	45.95	46.10	57.55	57.70	57.75	69.25
34.70	30.65	40.25	45.45	46.00	46.15	57.60	57.75	57.80	69.30
34.75	30.65	40.30	45.40	46.00	46.20	57.65	57.75	57.85	69.35
34.80	30.70	40.30	45.35	46.05	46.25	57.70	57.80	57.90	69.40
34.85	30.70	40.35	45.30	46.05	46.30	57.75	57.80	57.95	69.45
34.90	30.70	40.35	45.25	46.10	46.35	57.80	57.85	58.00	69.50
34.95	30.75	40.40	45.20	46.10	46.40	57.85	58.05	69.55	
35.00	30.75	40.40	45.15	46.15	46.45	57.90	58.10	69.60	
35.05	30.75	40.45	45.10	46.15	46.50	57.90	57.95	58.15	69.65
35.10	30.80	40.45	45.05	46.20	46.55	57.95	58.00	58.20	69.70
35.15	30.80	40.50	45.00	46.20	46.60	57.95	58.05	58.25	69.75
35.20	30.80	40.50	44.95	46.25	46.65	58.00	58.10	58.30	69.80
35.25	30.85	40.55	44.90	46.25	46.70	58.00	58.15	58.35	69.85
35.30	30.85	40.55	44.85	46.30	46.75	58.05	58.20	58.40	69.90
35.35	30.85	36.30	40.60	44.80	46.30	46.80	58.05	58.25	58.45	69.95
35.40	30.90	40.60	44.75	46.35	46.85	58.10	58.30	58.50	70.00
35.45	30.90	40.65	44.70	46.35	46.90	58.10	58.35	58.55	70.05
35.50	30.90	40.65	44.65	46.40	46.95	58.15	58.40	58.60	70.10
35.55	30.95	36.45	40.70	44.60	46.40	47.00	58.15	58.45	58.65	70.15
35.60	30.95	40.70	44.55	46.45	47.05	58.20	58.50	58.70	70.20
35.65	30.95	40.75	44.50	46.45	47.10	58.20	58.55	58.75	70.25
35.70	31.00	34.80	40.75	44.45	46.50	47.15	58.25	58.60	58.80	70.30
35.75	31.00	34.80	40.80	44.40	46.50	47.20	58.25	58.65	58.85	70.35
35.80	31.00	34.85	40.80	44.35	46.55	47.25	58.30	58.70	58.90	70.40
35.85	31.05	34.85	40.85	44.30	46.55	47.30	58.30	58.75	58.95	70.45
35.90	31.05	34.85	40.85	44.25	46.60	47.35	58.35	58.80	59.00	70.50
35.95	31.05	34.90	40.90	44.20	46.60	47.40	58.35	58.85	59.05	70.55
36.00	31.10	34.90	40.90	44.15	46.65	47.45	58.40	58.90	59.10	70.60

TABLE II-1 (Sheet 4 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)												
36.05	31.10	34.90	40.95	44.10	46.65	47.50	58.40	58.95	59.15	70.65			
36.10	31.10	34.95	40.95	44.05	46.70	47.55	58.45	59.00	59.20	70.70			
36.15	31.15	34.95	35.25	41.00	44.00	46.70	47.60	58.45	59.05	59.25	70.75		
36.20	31.15	34.95	35.30	41.00	43.95	46.75	47.65	58.50	59.10	59.30	70.80		
36.25	31.15	35.00	35.30	37.20	41.05	43.90	46.75	47.70	58.50	59.15	59.35	70.85	
36.30	31.20	35.00	35.35	37.25	41.05	43.85	46.80	47.75	58.55	59.20	59.40	70.90	
36.35	31.20	35.00	35.35	41.10	43.80	46.80	47.80	58.55	59.25	59.45	70.95		
36.40	31.20	35.05	35.35	41.10	43.75	46.85	47.85	58.60	59.30	59.50	71.00		
36.45	31.25	35.05	35.40	37.35	41.15	43.70	46.85	47.90	58.60	59.35	59.55	71.05	
36.50	31.25	35.05	35.45	41.15	43.65	46.90	47.95	58.65	59.40	59.60	71.10		
36.55	31.25	35.10	35.45	41.20	43.60	46.90	48.00	58.65	59.45	59.65	71.15		
36.60	31.30	35.10	35.50	41.20	43.55	46.95	48.05	58.70	59.50	59.70	71.20		
36.65	31.30	35.10	35.50	41.25	43.50	46.95	48.10	58.70	59.55	59.75	71.25		
36.70	31.30	35.15	35.55	41.25	43.45	47.00	48.15	58.75	59.60	59.80	71.30		
36.75	31.35	35.15	35.55	41.30	43.40	47.00	48.20	53.00	58.75	59.65	59.85	71.35	
36.80	31.35	35.15	35.60	41.30	43.35	47.05	48.25	53.00	58.80	59.70	59.90	71.40	
36.85	31.35	35.20	35.60	41.35	43.30	47.05	48.30	53.05	58.80	59.75	59.95	71.45	
36.90	31.40	35.20	35.60	41.35	43.25	47.10	48.35	53.05	58.85	59.80	60.00	71.50	
36.95	31.40	35.20	35.65	41.40	43.20	47.10	48.40	53.10	58.85	59.85	60.05	71.55	
37.00	31.40	35.25	35.70	41.40	43.15	47.15	48.45	53.10	58.90	59.90	60.10	71.60	
37.05	30.00	31.45	35.25	35.70	41.45	43.10	47.15	48.50	53.15	58.90	59.95	60.15	71.65
37.10	30.00	31.45	35.25	35.75	36.20	41.45	43.05	47.20	48.55	53.15	58.95	60.00	60.20	71.70
37.15	30.05	31.45	35.30	35.75	36.20	41.50	43.00	47.20	48.60	53.20	58.95	60.05	60.25	71.75
37.20	30.05	31.50	35.30	35.80	36.25	41.50	42.95	47.25	48.65	53.20	59.00	60.10	60.30	71.80
37.25	30.10	31.50	35.30	35.80	36.30	41.55	42.90	47.25	48.70	53.25	59.00	60.15	60.35	71.85
37.30	30.10	31.50	35.35	35.85	36.30	41.55	42.85	47.30	48.75	53.25	59.05	60.20	60.40	71.90
37.35	30.15	31.55	35.35	35.85	36.35	41.60	42.80	47.30	48.80	53.30	59.05	60.25	60.45	71.95
37.40	30.15	31.55	35.35	35.85	36.40	41.60	42.75	47.35	48.85	53.30	59.10	60.30	60.50	72.00
37.45	30.20	31.55	35.40	35.90	36.40	41.65	42.70	47.35	48.90	53.35	59.10	60.35	60.55	72.05
37.50	30.20	31.60	35.40	35.95	36.45	41.65	42.65	47.40	48.95	53.35	59.15	60.40	60.60	72.10
37.55	30.25	31.60	35.40	35.95	36.50	41.70	42.60	47.40	49.00	53.40	59.15	60.45	60.65	72.15
37.60	30.25	31.60	35.45	36.00	36.50	41.70	42.55	47.45	49.05	53.40	59.20	60.50	60.70	72.20
37.65	30.30	31.65	35.45	36.00	36.55	36.70	41.75	42.50	47.45	49.10	53.45	59.20	60.55	60.75	72.25
37.70	30.30	31.65	35.45	36.05	36.60	36.75	41.75	42.45	47.50	49.15	53.45	59.25	60.60	60.80	72.30
37.75	30.35	31.65	35.50	36.05	36.60	41.80	42.40	47.50	49.20	53.50	59.25	60.65	60.85	72.35	
37.80	30.35	31.70	35.50	36.10	36.65	41.80	42.35	47.55	49.25	53.50	59.30	60.70	60.90	72.40	
37.85	30.40	31.70	35.50	36.10	36.70	36.85	41.85	42.30	47.55	49.30	53.55	59.30	60.75	60.95	72.45
37.90	30.40	31.70	35.55	36.10	36.70	41.85	42.25	47.60	49.35	53.55	59.35	60.80	61.00	72.50	
37.95	30.45	31.75	35.55	36.15	36.75	41.90	42.20	47.60	49.40	53.60	59.35	60.85	61.05	72.55	
38.00	30.45	31.75	35.55	36.20	36.80	36.95	41.90	42.15	47.65	49.45	53.60	59.40	60.90	61.10	72.60
38.05	30.50	31.75	35.60	36.20	36.80	41.95	42.10	47.65	49.50	53.65	59.40	60.95	61.15	72.65	
38.10	30.50	31.80	35.60	36.25	36.85	41.95	42.05	47.70	49.55	53.65	59.45	61.00	61.20	72.70	
38.15	30.55	31.80	35.60	36.25	36.90	42.00	47.70	49.60	53.70	59.45	61.05	61.25	72.75		
38.20	30.55	31.80	35.65	36.30	36.90	41.95	42.00	47.75	49.65	53.70	59.50	61.10	61.30	72.80	
38.25	30.60	31.85	35.65	36.30	36.95	41.90	42.05	47.75	49.70	53.75	59.50	61.15	61.35	72.85	
38.30	30.60	31.85	35.65	36.35	37.00	41.85	42.05	47.80	49.75	53.75	59.55	61.20	61.40	72.90	
38.35	30.65	31.85	35.70	36.35	37.00	41.80	42.10	47.80	49.80	53.80	59.55	61.25	61.45	72.95	
38.40	30.65	31.90	35.70	36.35	37.05	41.75	42.10	47.85	49.85	53.80	59.60	61.30	61.50	73.00	

TABLE II-1 (Sheet 5 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																
38.45	30.70	31.90	35.70	36.40	37.10	37.55	41.70	42.15	47.85	49.90	53.85	59.60	61.35	61.55	73.05		
38.50	30.70	31.90	35.75	36.45	37.10	41.65	42.15	47.90	49.95	53.85	59.65	61.40	61.60	73.10			
38.55	30.75	31.95	35.75	36.45	37.15	39.75	41.60	42.20	47.90	50.00	53.90	59.65	61.45	61.65	73.15		
38.60	30.75	31.95	35.75	36.50	37.20	37.65	39.80	41.55	42.20	47.95	50.05	53.90	59.70	61.50	61.70	73.20	
38.65	30.80	31.95	35.80	36.50	37.20	37.70	39.85	41.60	42.25	47.95	50.10	53.95	59.70	61.55	61.75	73.25	
38.70	30.80	32.00	35.80	36.55	37.25	41.45	42.25	48.00	50.15	53.95	59.75	61.60	61.80	73.30			
38.75	30.85	32.00	35.80	36.55	37.30	41.40	42.30	48.00	50.20	54.00	59.75	61.65	61.85	73.35			
38.80	30.85	32.00	35.85	36.60	37.30	37.80	41.35	42.30	48.05	50.25	54.00	59.80	61.70	61.90	73.40		
38.85	30.90	32.05	35.85	36.60	37.35	37.85	37.95	40.00	40.60	41.30	42.35	48.05	50.30	54.05	59.80	61.75	61.95 73.45
38.90	30.90	32.05	35.85	36.60	37.40	37.90	38.00	40.05	41.25	42.35	48.10	50.35	54.05	59.85	61.80	62.00	73.50
38.95	30.95	32.05	35.90	36.65	37.40	40.10	40.65	41.20	42.40	48.10	50.40	54.10	59.85	61.85	62.05	73.55	
39.00	30.95	32.10	35.90	36.70	37.45	40.70	41.15	42.40	48.15	50.45	54.10	59.90	61.90	62.10	73.60		
39.05	31.00	32.10	35.90	36.70	37.50	38.10	40.75	41.10	42.45	48.15	50.50	54.15	59.90	61.95	62.15	73.65	
39.10	31.00	32.10	35.95	36.75	37.50	38.15	41.05	42.45	48.20	50.55	54.15	59.95	62.00	62.20	73.70		
39.15	31.05	32.15	35.95	36.75	37.55	38.20	40.25	40.80	41.00	42.50	48.20	50.60	54.20	59.95	62.05	62.25	73.75
39.20	31.05	32.15	35.95	36.80	37.60	40.30	40.85	40.95	42.50	48.25	50.65	54.20	60.00	62.10	62.30	73.80	
39.25	31.10	32.15	36.00	36.80	37.60	40.35	40.90	42.55	48.25	50.70	54.25	60.00	62.15	62.35	73.85		
39.30	31.10	32.20	36.00	36.85	37.65	38.30	40.85	42.55	48.30	50.75	54.25	60.05	62.20	62.40	73.90		
39.35	31.15	32.20	36.05	36.85	37.70	38.35	40.80	40.95	42.60	48.30	50.80	54.30	60.05	62.25	62.45	73.95	
39.40	31.15	32.20	36.05	36.85	37.70	38.40	40.75	41.00	42.60	48.35	50.85	54.30	60.10	62.30	62.50	74.00	
39.45	31.20	32.25	36.05	36.90	37.75	40.50	40.70	41.05	42.65	48.35	50.90	54.35	60.10	62.35	62.55	74.05	
39.50	31.20	32.25	36.05	36.95	37.80	40.55	40.65	42.65	48.40	50.95	54.35	60.15	62.40	62.60	74.10		
39.55	31.25	32.25	36.10	36.95	37.80	38.50	40.60	41.10	42.70	48.40	51.00	54.40	60.15	62.45	62.65	74.15	
39.60	31.25	32.30	36.10	37.00	37.85	38.55	40.55	41.15	42.70	48.45	51.05	54.40	60.20	62.50	62.70	74.20	
39.65	31.30	32.30	36.10	37.00	37.90	38.60	41.20	42.75	48.45	51.10	54.45	60.20	62.55	62.75	74.25		
39.70	31.30	32.30	36.15	37.05	37.90	42.75	48.50	51.15	54.45	60.25	62.60	62.80	74.30				
39.75	31.35	32.35	36.15	37.05	37.95	40.75	41.25	42.80	48.50	51.20	54.50	60.25	62.65	62.85	74.35		
39.80	31.35	32.35	36.15	37.10	38.00	38.70	40.80	41.30	42.80	48.55	51.25	54.50	60.30	62.70	62.90	74.40	
39.85	31.40	32.35	36.20	37.10	38.00	38.75	40.85	41.35	42.85	48.55	51.30	54.55	60.30	62.75	62.95	74.45	
39.90	31.40	32.40	36.20	37.10	38.05	38.80	42.85	48.60	51.35	54.55	60.35	62.80	63.00	74.50			
39.95	31.45	32.40	36.20	37.15	38.10	41.40	42.90	48.60	51.40	54.60	60.35	62.85	63.05	74.55			
40.00	31.45	32.40	36.25	37.20	38.10	41.45	42.90	48.65	51.45	54.60	60.40	62.90	63.10	74.60			
40.05	31.50	32.45	36.25	37.20	38.15	38.90	41.00	41.50	42.95	48.65	51.50	54.65	60.40	62.95	63.15	74.65	
40.10	31.50	32.45	36.25	37.25	38.20	38.95	41.05	42.95	48.70	51.55	54.65	60.45	63.00	63.20	74.70		
40.15	31.55	32.45	36.30	37.25	38.20	39.00	41.10	41.55	43.00	48.70	51.60	54.70	60.45	63.05	63.25	74.75	
40.20	31.55	32.50	36.30	37.30	38.25	41.60	43.00	48.75	51.65	54.70	60.50	63.10	63.30	74.80			
40.25	31.60	32.50	36.30	37.30	38.30	41.65	43.05	48.75	51.70	54.75	60.50	63.15	63.35	74.85			
40.30	31.60	32.50	36.35	37.35	38.30	39.10	43.05	48.80	51.75	54.75	60.55	63.20	63.40	74.90			
40.35	31.65	32.55	36.35	37.35	38.35	39.15	41.25	41.70	43.10	48.80	51.80	54.80	60.55	63.25	63.45	74.95	
40.40	31.65	32.55	36.35	37.35	38.40	39.20	41.30	41.75	43.10	48.85	51.85	54.80	60.60	63.30	63.50	75.00	
40.45	31.70	32.55	36.40	37.40	38.40	41.80	43.15	48.85	51.90	54.85	60.60	63.35	63.55	75.05			
40.50	31.70	32.60	36.40	37.45	38.45	43.15	48.90	51.95	54.85	60.65	63.40	63.60	75.10				
40.55	31.75	32.60	36.40	37.45	38.50	39.30	39.60	41.85	43.20	48.90	52.00	54.90	60.65	63.45	63.65	75.15	
40.60	31.75	32.60	36.45	37.50	38.50	39.35	39.55	41.90	43.20	48.95	52.05	54.90	60.70	63.50	63.70	75.20	
40.65	31.80	32.65	36.45	37.50	38.55	39.40	39.50	41.95	43.25	48.95	52.10	54.95	60.70	63.55	63.75	75.25	
40.70	31.80	32.65	36.45	37.55	38.60	39.45	43.25	49.00	52.15	54.95	60.75	63.60	63.80	75.30			
40.75	31.85	32.65	36.50	37.55	38.60	39.40	42.00	43.30	49.00	52.20	55.00	60.75	63.65	63.85	75.35		
40.80	31.85	32.70	36.50	37.60	38.65	39.35	39.50	42.05	43.30	49.05	52.25	55.00	60.80	63.70	63.90	75.40	

TABLE II-1 (Sheet 6 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)															
40.85	31.70	32.70	36.50	37.60	38.70	39.30	39.55	42.10	43.35	49.05	52.30	55.05	60.80	63.75	63.95	75.45
40.90	31.70	32.70	36.55	37.60	38.70	39.25	39.60	43.35	49.10	52.35	55.05	60.85	63.80	64.00	75.50	
40.95	31.75	32.75	36.55	37.65	38.75	39.20	42.15	43.40	49.10	52.40	55.10	60.85	63.85	64.05	75.55	
41.00	31.75	32.75	36.55	37.70	38.80	39.15	42.20	43.40	49.15	52.45	55.10	60.90	63.90	64.10	75.60	
41.05	32.00	32.75	36.60	37.70	38.80	39.10	39.70	42.25	43.45	49.15	52.50	55.15	60.90	63.95	64.15	75.65
41.10	32.00	32.80	36.60	37.75	38.85	39.05	39.75	42.15	43.45	49.20	52.55	55.15	60.95	64.00	64.20	75.70
41.15	32.05	32.80	36.60	37.75	38.90	39.00	39.80	42.30	43.50	49.20	52.60	55.20	60.95	64.05	64.25	75.75
41.20	32.05	32.80	36.65	37.80	38.90	38.95	42.35	43.50	49.25	52.65	55.20	61.00	64.10	64.30	75.80	
41.25	32.10	32.85	36.65	37.80	38.90	38.95	42.25	42.40	43.55	49.25	52.70	55.25	61.00	64.15	64.35	75.85
41.30	32.10	32.85	36.65	37.85	38.85	39.00	39.90	42.30	43.55	49.30	52.75	55.25	61.05	64.20	64.40	75.90
41.35	32.15	32.85	36.70	37.85	38.80	39.00	39.95	42.35	42.45	43.60	49.30	52.80	55.30	61.05	64.25	64.45 75.95
41.40	32.15	32.90	36.70	37.85	38.75	39.05	40.00	42.50	43.60	49.35	52.85	55.30	61.10	64.30	64.50	
41.45	30.00	32.20	32.90	36.70	37.90	38.70	39.10	42.55	43.65	49.35	52.90	53.00	55.35	61.10	64.35	64.55
41.50	30.05	32.20	32.90	36.75	37.95	38.65	39.10	42.45	43.65	49.40	52.95	53.05	55.35	61.15	64.40	64.60
41.55	30.10	32.25	32.95	36.75	37.95	38.60	39.15	42.50	42.60	43.70	49.40	53.10	55.40	61.15	64.45	64.65
41.60	30.15	32.25	32.95	36.75	38.00	38.55	39.20	42.65	43.70	49.45	53.15	55.40	61.20	64.50	64.70	
41.65	30.20	32.30	32.95	36.80	38.00	38.50	39.20	42.70	43.75	49.45	53.20	55.45	61.20	64.55	64.75	
41.70	30.25	32.30	33.00	36.80	38.05	38.45	39.25	42.60	43.75	49.50	53.25	55.45	61.25	64.60	64.80	
41.75	30.30	32.35	33.00	36.80	38.05	38.40	39.30	42.65	42.75	43.80	49.50	53.30	55.50	61.25	64.65	64.85
41.80	30.35	32.35	33.00	36.85	38.10	38.35	39.30	42.80	43.80	49.55	53.35	55.50	61.30	64.70	64.90	
41.85	30.40	32.40	33.05	36.85	38.10	38.30	39.35	42.85	43.85	49.55	53.40	55.55	61.30	64.75	64.95	
41.90	30.45	32.40	33.05	36.85	38.10	38.25	39.40	43.85	49.60	53.45	55.55	61.35	64.80	65.00		
41.95	30.50	32.45	33.05	36.90	38.15	38.20	39.40	42.90	43.90	49.60	53.50	55.60	61.35	64.85	65.05	
42.00	30.55	32.45	33.10	36.90	38.15	38.20	39.45	42.95	43.90	49.65	53.55	55.60	61.40	64.90	65.10	
42.05	30.60	32.50	33.10	36.90	38.10	38.20	39.50	43.00	43.95	49.65	53.60	55.65	61.40	64.95	65.15	
42.10	30.65	32.50	33.10	36.95	38.05	38.25	39.50	43.95	49.70	53.65	55.65	61.45	65.00	65.20		
42.15	30.70	32.55	33.15	36.95	38.00	38.25	39.55	43.05	44.00	49.70	53.70	55.70	61.45	65.05	65.25	
42.20	30.75	32.55	33.15	36.95	37.95	38.30	39.60	43.10	44.00	49.75	53.75	55.70	61.50	65.10	65.30	
42.25	30.80	32.60	33.15	37.00	37.90	38.30	39.60	44.05	49.75	53.80	55.75	61.50	65.15	65.35		
42.30	30.85	32.60	33.20	37.00	37.85	38.35	39.65	44.05	49.80	53.85	55.75	61.55	65.20	65.40		
42.35	30.90	32.65	33.20	37.00	37.80	38.35	39.70	44.10	49.80	53.90	55.80	61.55	65.25	65.45		
42.40	30.95	32.65	33.20	37.05	37.75	38.35	39.70	44.10	49.85	53.95	55.80	61.60	65.30	65.50		
42.45	31.00	32.70	33.25	37.05	37.70	38.40	39.75	44.15	49.85	54.00	55.85	61.60	65.35	65.55		
42.50	31.05	32.70	33.25	37.05	37.65	38.45	39.80	44.15	49.90	54.05	55.85	61.65	65.40	65.60		
42.55	31.10	32.75	33.25	37.10	37.60	38.45	39.80	44.20	49.90	54.10	55.90	61.65	65.45	65.65		
42.60	31.15	32.75	33.30	37.10	37.55	38.50	39.85	44.20	49.95	54.15	55.90	61.70	65.50	65.70		
42.65	31.20	32.80	33.30	37.10	37.50	38.50	39.90	44.25	49.95	54.20	55.95	61.70	65.55	65.75		
42.70	31.25	32.80	33.30	37.15	37.45	38.55	39.90	44.26	50.00	54.25	55.95	61.75	65.60	65.80		
42.75	31.30	32.85	33.35	37.15	37.40	38.55	39.95	44.30	50.00	54.30	56.00	61.75	65.65	65.85		
42.80	31.35	32.85	33.35	37.15	37.35	38.60	40.00	44.30	50.05	54.35	56.00	61.80	65.70	65.90		
42.85	31.40	32.90	33.35	37.20	37.30	38.60	40.00	44.35	50.05	54.40	56.05	61.80	65.75	65.95		
42.90	31.45	32.90	33.40	37.20	37.25	38.60	40.05	44.35	50.10	54.45	56.05	61.85	65.80	66.00		
42.95	31.50	32.95	33.40	37.20	38.65	40.10	44.40	50.10	54.50	56.10	61.85	65.85	66.05			
43.00	31.55	32.95	33.40	37.15	37.25	38.70	40.10	44.40	50.15	54.55	56.10	61.90	65.90	66.10		
43.05	31.60	33.00	33.45	37.10	37.25	38.70	40.15	44.45	50.15	54.60	56.15	61.90	65.95	66.15		
43.10	31.65	33.00	33.45	37.05	37.25	38.75	40.20	44.45	50.20	54.65	56.15	61.95	66.00	66.20		
43.15	31.70	33.05	33.45	37.00	37.30	38.75	40.20	44.50	50.20	54.70	56.20	61.95	66.05	66.25		
43.20	31.75	33.05	33.50	36.95	37.30	38.80	40.25	44.50	50.25	54.75	56.20	62.00	66.10	66.30		

TABLE II-1 (Sheet 7 of 23)

RCVR FREQ (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)												
43.25	31.80	33.10	33.50	36.90	37.35	38.80	40.30	44.55	50.25	54.80	56.25	62.00	66.15	66.35
43.30	31.85	33.10	33.50	36.85	37.35	38.85	40.30	44.55	50.30	54.85	56.25	62.05	66.20	66.40
43.35	31.90	33.15	33.55	36.80	37.35	38.85	40.35	44.60	50.30	54.90	56.30	62.05	66.25	66.45
43.40	31.95	33.15	33.55	36.75	37.35	38.85	44.60	50.35	54.95	56.30	62.10	66.30	66.50	
43.45	32.00	33.20	33.55	36.70	37.40	38.90	44.65	50.35	55.00	56.35	62.10	66.35	66.55	
43.50	32.05	33.20	33.60	36.65	37.40	38.95	44.65	50.40	55.05	56.35	62.15	66.40	66.60	
43.55	32.10	33.25	33.60	36.60	37.40	38.95	44.70	50.40	55.10	56.40	62.15	66.45	66.65	
43.60	32.15	33.25	33.60	36.55	37.45	39.00	44.70	50.45	55.15	56.40	62.20	66.50	66.70	
43.65	32.20	33.30	33.65	36.50	37.45	39.00	44.75	50.45	55.20	56.45	62.20	66.55	66.75	
43.70	32.25	33.30	33.65	36.45	37.45	39.05	42.80	44.75	50.50	55.25	56.45	62.25	66.60	66.80
43.75	32.30	33.35	33.65	36.40	37.50	39.05	44.80	50.50	55.30	56.50	62.25	66.65	66.85	
43.80	32.35	33.35	33.70	36.35	37.50	39.10	44.80	50.55	55.35	56.50	62.30	66.70	66.90	
43.85	32.40	33.40	33.70	36.30	37.50	39.10	42.90	44.85	50.55	55.40	56.55	62.30	66.75	66.95
43.90	32.45	33.40	33.70	36.25	37.55	39.10	42.95	44.85	50.60	55.45	56.55	62.35	66.80	67.00
43.95	32.50	33.45	33.75	36.20	37.55	39.15	44.90	50.60	55.50	56.60	62.35	66.85	67.05	
44.00	32.55	33.45	33.75	36.15	37.55	39.20	44.90	50.65	55.55	56.60	62.40	66.90	67.10	
44.05	32.60	33.50	33.75	36.10	37.60	39.20	43.05	44.95	50.65	55.60	56.65	62.40	66.95	67.15
44.10	32.65	33.50	33.80	36.05	37.60	39.25	43.10	50.70	55.65	56.65	62.45	67.00	67.20	
44.15	30.00	32.70	33.55	33.80	36.00	37.60	39.25	50.70	55.70	56.70	62.45	67.05	67.25	
44.20	30.00	32.75	33.55	33.80	35.95	37.65	39.30	50.75	55.75	56.70	62.50	67.10	67.30	
44.25	30.00	32.80	33.60	33.85	35.90	37.65	39.30	43.20	50.75	55.80	56.75	62.50	67.15	67.35
44.30	30.05	32.85	33.60	33.85	35.85	37.65	39.35	43.25	50.80	55.85	56.75	62.55	67.20	67.40
44.35	30.05	32.90	33.65	33.85	35.80	37.70	39.35	50.80	55.90	56.80	62.55	67.25	67.45	
44.40	30.05	32.95	33.65	33.90	35.75	37.70	39.35	50.85	55.95	56.80	62.60	67.30	67.50	
44.45	30.10	33.00	33.70	33.90	35.70	37.70	39.40	43.35	50.85	56.00	56.85	62.60	67.35	67.55
44.50	30.10	33.05	33.70	33.90	35.65	37.75	39.45	43.40	50.90	56.05	56.85	62.65	67.40	67.60
44.55	30.10	33.10	33.75	33.95	35.60	37.75	39.45	50.90	56.10	56.90	62.65	67.45	67.65	
44.60	30.15	33.15	33.75	33.95	35.55	37.75	39.50	43.70	50.95	56.15	56.90	62.70	67.50	67.70
44.65	30.15	33.20	33.80	33.95	35.50	37.80	39.50	43.50	50.95	56.20	56.95	62.70	67.55	67.75
44.70	30.15	33.25	33.80	34.00	35.45	37.80	39.55	51.00	56.25	56.95	62.75	67.60	67.80	
44.75	30.20	33.30	33.85	34.00	35.40	37.80	39.55	51.00	56.30	57.00	62.75	67.65	67.85	
44.80	30.20	33.35	33.85	34.00	35.35	37.85	39.60	43.85	51.05	56.35	57.00	62.80	67.70	67.90
44.85	30.20	33.40	33.90	34.05	35.30	37.85	39.60	43.90	51.05	56.40	57.05	62.80	67.75	67.95
44.90	30.25	33.45	33.90	34.05	35.25	37.85	39.60	51.10	56.45	57.05	62.85	67.80	68.00	
44.95	30.25	33.50	33.95	34.05	35.20	37.90	39.65	51.10	56.50	57.10	62.85	67.85	68.05	
45.00	30.25	33.55	33.95	34.10	35.15	37.90	39.70	51.15	56.55	57.10	62.90	67.90	68.10	
45.05	30.30	33.60	34.00	34.10	35.10	37.90	39.70	44.05	51.15	56.60	57.15	62.90	67.95	68.15
45.10	30.30	33.65	34.00	34.10	35.05	37.95	39.75	44.10	51.20	56.65	57.15	62.95	68.00	68.20
45.15	30.30	33.70	34.05	34.15	35.00	37.95	39.75	51.20	56.70	57.20	62.95	68.05	68.25	
45.20	30.35	33.75	34.05	34.15	34.95	37.95	39.80	51.25	56.75	57.20	63.00	68.10	68.30	
45.25	30.35	33.80	34.10	34.15	34.90	38.00	39.80	51.25	56.80	57.25	63.00	68.15	68.35	
45.30	30.35	33.85	34.10	34.20	34.85	38.00	39.85	44.25	51.30	56.85	57.25	63.05	68.20	68.40
45.35	30.40	33.90	34.15	34.20	34.80	38.00	39.85	44.30	51.30	56.90	57.30	63.05	68.25	68.45
45.40	30.40	33.95	34.15	34.20	34.75	38.05	39.85	51.35	56.95	57.30	63.10	68.30	68.50	
45.45	30.40	34.00	34.20	34.25	34.70	38.05	39.90	51.35	57.00	57.35	63.10	68.35	68.55	
45.50	30.45	34.05	34.20	34.25	34.65	38.05	39.95	51.40	57.05	57.35	63.15	68.40	68.60	
45.55	30.45	34.10	34.25	34.30	38.10	39.95	44.45	51.40	57.10	57.40	63.15	68.45	68.65	
45.60	30.45	34.15	34.25	34.30	34.55	38.10	40.00	44.50	51.45	57.15	57.40	63.20	68.50	68.70

TABLE II-1 (Sheet 8 of 23)

RCVR. FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)												
45.65:	30.50	34.20	34.30	34.50	38.10	40.00	51.45	57.20	57.45	63.20	68.55	68.75	
45.70:	30.50	34.25	34.30	34.45	38.15	40.05	51.50	57.25	57.45	63.25	68.60	68.80	
45.75:	30.50	34.30	34.35	34.40	38.15	40.05	51.50	57.30	57.50	63.25	68.65	68.85	
45.80:	Entire Low Band					57.35	57.50	63.30	68.70	68.90			
45.85:	30.55	34.30	34.35	34.40	38.20	40.10	51.55	57.40	57.55	63.30	68.75	68.95	
45.90:	30.55	34.25	34.40	34.45	38.20	40.15	51.60	57.45	57.55	63.35	68.80	69.00	
45.95:	30.60	34.20	34.40	34.45	34.50	38.20	40.15	51.60	57.50	57.60	63.35	68.85	69.05
46.00:	30.60	34.15	34.40	34.45	34.55	38.25	40.20	47.10	51.65	57.55	57.60	63.40	68.90 69.10
46.05:	30.60	34.10	34.45	34.50	34.60	38.25	40.20	47.15	51.65	57.60	57.65	63.40	68.95 69.15
46.10:	30.65	34.05	34.45	34.50	34.65	38.25	40.25	51.70	57.65	63.45	69.00	69.20	
46.15:	30.65	34.00	34.45	34.55	34.70	38.30	40.25	51.70	57.70	63.45	69.05	69.25	
46.20:	30.65	33.95	34.50	34.55	34.75	38.30	40.30	51.75	57.70	57.75	63.50	69.10	69.30
46.25:	30.70	33.90	34.50	34.60	34.80	38.30	40.30	47.30	51.75	57.75	57.80	63.50	69.15 69.35
46.30:	30.70	33.85	34.50	34.60	34.85	38.35	40.35	47.35	51.80	57.75	57.85	63.55	69.20 69.40
46.35:	30.70	33.80	34.55	34.65	34.90	38.35	40.35	51.80	57.80	57.90	63.55	69.25	69.45
46.40:	30.75	33.75	34.55	34.65	34.95	38.35	40.40	51.85	57.80	57.95	63.60	69.30	69.50
46.45:	30.75	33.70	34.55	34.70	35.00	38.40	40.40	51.85	57.85	58.00	63.60	69.35	69.55
46.50:	30.75	33.65	34.60	34.70	35.05	38.40	40.45	47.50	51.90	57.85	58.05	63.65	69.40 69.60
46.55:	30.80	33.60	34.60	34.75	35.10	38.40	40.45	47.55	51.90	57.90	58.10	63.65	69.45 69.65
46.60:	30.80	33.55	34.60	34.75	35.15	38.45	40.50	51.95	57.90	58.15	63.70	69.50	69.70
46.65:	30.80	33.50	34.65	34.80	35.20	38.45	40.50	51.95	57.95	58.20	63.70	69.55	69.75
46.70:	30.85	33.45	34.65	34.80	35.25	38.45	40.55	52.00	57.95	58.25	63.75	69.60	69.80
46.75:	30.85	33.40	34.65	34.85	35.30	38.50	40.55	47.70	52.00	58.00	58.30	63.75	69.65 69.85
46.80:	30.85	33.35	34.70	34.85	35.35	38.50	40.60	47.75	52.05	58.00	58.35	63.80	69.70 69.90
46.85:	30.90	33.30	34.70	34.90	35.40	38.50	40.60	52.05	58.05	58.40	63.80	69.75	69.95
46.90:	30.90	33.25	34.70	34.90	35.45	38.55	40.65	52.10	58.05	58.45	63.85	69.80	70.00
46.95:	30.90	33.20	34.75	34.95	35.50	38.55	40.65	52.10	58.10	58.50	63.85	69.85	70.05
47.00:	30.95	33.15	34.75	34.95	35.55	38.55	40.70	47.90	52.15	58.10	58.55	63.90	69.90 70.10
47.05:	30.95	33.10	34.75	35.00	35.60	38.60	40.70	52.15	58.15	58.60	63.90	69.95	70.15
47.10:	30.95	33.05	34.80	35.00	35.65	38.60	40.75	52.20	58.15	58.65	63.95	70.00	70.20
47.15:	31.00	33.00	34.80	35.05	35.70	38.60	40.75	52.20	58.20	58.70	63.95	70.05	70.25
47.20:	31.00	32.95	34.80	35.05	35.75	38.65	40.80	52.25	58.20	58.75	64.00	70.10	70.30
47.25:	31.00	32.90	34.85	35.10	35.80	38.65	40.80	52.25	58.25	58.80	64.00	70.15	70.35
47.30:	31.05	32.85	34.85	35.10	35.85	38.65	40.85	52.30	58.25	58.85	64.05	70.20	70.40
47.35:	31.05	32.80	34.85	35.15	35.90	38.70	40.85	52.30	58.30	58.90	64.05	70.25	70.45
47.40:	31.05	32.75	34.90	35.15	35.95	38.70	40.90	52.35	58.30	58.95	64.10	70.30	70.50
47.45:	31.10	32.70	34.90	35.20	36.00	38.70	40.90	52.35	58.35	59.00	64.10	70.35	70.55
47.50:	31.10	32.65	34.90	35.20	36.05	38.75	40.95	52.40	58.35	59.05	64.15	70.40	70.60
47.55:	31.10	32.60	34.95	35.25	36.10	38.75	40.95	52.40	58.40	59.10	64.15	70.45	70.65
47.60:	31.15	32.55	34.95	35.25	36.15	38.75	41.00	46.70	52.45	58.40	59.15	64.20	70.50 70.70
47.65:	31.15	32.50	34.95	35.30	36.20	38.80	41.00	46.75	52.45	58.45	59.20	64.20	70.55 70.75
47.70:	31.15	32.45	35.00	35.30	36.25	38.80	41.05	46.75	52.50	58.45	59.25	64.25	70.60 70.80
47.75:	31.20	32.40	35.00	35.35	36.30	38.80	41.05	46.80	52.50	58.50	59.30	64.25	70.65 70.85
47.80:	31.20	32.35	35.00	35.35	36.35	38.85	41.10	46.80	52.55	58.50	59.35	64.30	70.70 70.90
47.85:	31.20	32.30	35.05	35.40	36.40	38.85	41.10	46.85	52.55	58.55	59.40	64.30	70.75 70.95
47.90:	31.25	32.25	35.05	35.40	36.45	38.85	41.15	46.85	52.60	58.55	59.45	64.35	70.80 71.00
47.95:	31.25	32.20	35.05	35.45	36.50	38.90	41.15	46.90	52.60	58.60	59.50	64.35	70.85 71.05
48.00:	31.25	32.15	35.10	35.45	36.55	38.90	41.20	46.90	52.65	58.60	59.55	64.40	70.90 71.10

TABLE II-1 (Sheet 9 of 23)

RCVR FREQ (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)														
48.05	31.30	32.00	35.10	35.50	36.60	38.90	41.30	46.95	52.45	58.45	59.60	64.40	70.95	71.15	
48.10	31.30	32.05	35.10	35.50	36.65	38.95	41.25	46.95	52.70	58.65	59.65	64.45	71.00	71.20	
48.15	31.30	32.00	35.15	35.55	36.70	38.95	41.25	47.00	52.70	58.70	59.70	64.45	71.05	71.25	
48.20	31.35	31.95	35.15	35.55	36.75	38.95	41.30	47.00	52.75	58.70	59.75	64.50	71.10	71.30	
48.25	31.35	31.90	35.15	35.60	36.80	39.00	41.30	47.05	52.75	53.00	58.75	59.80	64.50	71.15	71.35
48.30	31.35	31.85	35.20	35.60	36.85	39.00	41.35	47.05	52.80	53.00	58.75	59.85	64.55	71.20	71.40
48.35	31.40	31.80	35.20	35.65	36.90	39.00	41.35	47.10	52.80	53.05	58.80	59.90	64.55	71.25	71.45
48.40	31.40	31.75	35.20	35.65	36.95	39.05	41.40	47.10	52.85	53.05	58.80	59.95	64.60	71.30	71.50
48.45	31.40	31.70	35.25	35.70	37.00	39.05	41.40	47.15	52.85	53.10	58.85	60.00	64.60	71.35	71.55
48.50	30.00	31.45	31.65	35.25	35.70	37.05	39.05	41.45	47.15	52.90	53.10	58.85	60.05	64.65	71.40	71.60
48.55	30.00	31.45	31.60	35.25	35.75	37.10	39.10	41.45	47.20	52.90	53.15	58.90	60.10	64.65	71.45	71.65
48.60	30.05	31.45	31.55	35.30	35.75	37.15	39.10	41.50	47.20	52.95	53.15	58.90	60.15	64.70	71.50	71.70
48.65	30.05	31.50	35.30	35.80	37.20	39.10	41.50	47.25	52.95	53.20	58.95	60.20	64.70	71.55	71.75	
48.70	30.10	31.45	31.50	35.30	35.80	37.25	39.15	41.55	47.25	53.20	58.95	60.25	64.75	71.60	71.80	
48.75	30.10	31.40	31.50	35.35	35.85	37.30	39.15	41.55	47.30	53.25	59.00	60.30	64.75	71.65	71.85	
48.80	30.15	31.35	31.55	35.35	35.85	37.35	39.15	41.60	47.30	53.25	59.00	60.35	64.80	71.70	71.90	
48.85	30.15	31.30	31.55	35.35	35.90	37.40	39.20	41.60	47.35	53.30	59.05	60.40	64.80	71.75	71.95	
48.90	30.20	31.25	31.55	35.40	35.90	37.45	39.20	41.65	47.35	53.30	59.05	60.45	64.85	71.80	72.00	
48.95	30.20	31.20	31.60	35.40	35.95	37.50	39.20	41.65	47.40	53.35	59.10	60.50	64.85	71.85	72.05	
49.00	30.25	31.15	31.60	35.40	35.95	37.55	39.25	41.70	47.40	53.35	59.10	60.55	64.90	71.90	72.10	
49.05	30.25	31.10	31.60	35.45	36.00	37.60	39.25	41.70	47.45	53.40	59.15	60.60	64.90	71.95	72.15	
49.10	30.30	31.05	31.65	35.45	36.00	37.65	39.25	41.75	47.45	53.40	59.15	60.65	64.95	72.00	72.20	
49.15	30.30	31.00	31.65	35.45	36.05	37.70	39.30	41.75	47.50	50.30	53.45	59.20	60.70	64.95	72.05	72.25
49.20	30.35	30.95	31.65	35.50	36.05	37.75	39.30	41.80	47.50	50.35	53.45	59.20	60.75	65.00	72.10	72.30
49.25	30.35	30.90	31.70	35.50	36.10	37.80	39.30	41.80	47.55	50.40	53.50	59.25	60.80	65.00	72.15	72.35
49.30	30.40	30.85	31.70	35.50	36.10	37.85	39.35	41.85	47.55	53.50	59.25	60.85	65.05	72.20	72.40	
49.35	30.40	30.80	31.70	35.55	36.15	37.90	39.35	41.85	47.60	53.55	59.30	60.90	65.05	72.25	72.45	
49.40	30.45	30.75	31.75	35.55	36.15	37.95	39.35	41.90	47.60	53.55	59.30	60.95	65.10	72.30	72.50	
49.45	30.45	30.70	31.75	35.55	36.20	38.00	39.40	41.90	47.65	48.55	53.60	59.35	61.00	65.10	72.35	72.55
49.50	30.50	30.65	31.75	35.60	36.20	38.05	39.40	41.95	47.65	50.60	53.60	59.35	61.05	65.15	72.40	72.60
49.55	30.50	30.60	31.80	35.60	36.25	38.10	39.40	41.95	47.70	48.60	50.65	53.65	59.40	61.10	65.15	72.45	72.65
49.60	30.55	31.60	35.60	36.25	38.15	39.45	42.00	47.70	48.65	50.70	53.65	59.40	61.15	65.20	72.50	72.70
49.65	30.50	30.55	31.80	35.65	36.30	38.20	39.45	42.00	47.75	48.70	53.70	59.45	61.20	65.20	72.55	72.75
49.70	30.45	30.60	31.85	35.65	36.30	38.25	39.45	42.05	47.75	51.20	53.70	59.45	61.25	65.25	72.60	72.80
49.75	30.40	30.60	31.85	35.65	36.35	38.30	39.50	42.05	47.80	48.75	51.25	53.75	59.50	61.30	65.25	72.65	72.85
49.80	30.35	30.65	31.85	35.70	36.35	38.35	39.50	42.10	47.80	48.80	51.30	53.75	59.50	61.35	65.30	72.70	72.90
49.85	30.30	30.65	31.90	35.70	36.40	38.40	39.50	42.10	47.85	48.85	48.95	50.90	53.80	59.55	61.40	65.30	72.75	72.95
49.90	30.25	30.70	31.90	35.70	36.40	38.45	39.55	42.15	47.85	49.00	50.95	53.80	59.55	61.45	65.35	72.80	73.00	
49.95	30.20	30.70	31.90	35.75	36.45	38.50	39.55	42.15	47.90	48.90	51.00	51.40	53.85	59.60	61.50	65.35	72.85	73.05
50.00	30.15	30.75	31.95	35.75	36.45	38.55	39.55	42.20	47.90	48.95	51.45	53.85	59.60	61.55	65.40	72.90	73.10	
50.05	30.10	30.75	31.95	35.75	36.50	38.60	39.60	42.20	47.95	49.00	49.10	51.50	53.90	59.65	61.60	65.40	72.95	73.15
50.10	30.05	30.80	31.95	35.80	36.50	38.65	39.60	42.25	47.95	49.15	53.90	59.65	61.65	65.45	73.00	73.20		
50.15	30.00	30.80	32.00	35.80	36.55	38.70	39.60	42.25	48.00	49.05	53.95	59.70	61.70	65.45	73.05	73.25		
50.20	30.05	32.00	35.80	36.55	38.75	39.65	42.30	48.00	49.10	51.20	51.60	53.95	59.70	61.75	65.50	73.10	73.30	
50.25	30.05	32.00	35.85	36.60	38.80	39.65	42.30	48.05	49.15	49.25	51.25	51.65	54.00	59.75	61.80	65.50	73.15	73.35
50.30	30.10	32.05	35.85	36.60	38.85	39.65	42.35	48.05	49.30	51.30	51.70	54.00	59.75	61.85	65.55	73.20	73.40	
50.35	30.10	32.05	35.85	36.65	38.90	39.70	42.35	48.10	49.20	49.35	54.05	59.80	61.90	65.55	73.25	73.45		
50.40	30.15	32.05	35.90	36.65	38.95	39.70	42.40	48.10	49.25	54.05	59.80	61.95	65.60	73.30	73.50			

TABLE II-1 (Sheet 10 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																
50.45	30.95	32.10	35.90	36.70	39.00	39.70	42.40	48.15	49.30	51.80	54.10	59.85	62.00	65.60	73.35	73.55	
50.50	31.00	32.10	35.90	36.70	39.05	39.75	42.45	48.15	49.45	51.85	54.10	59.85	62.05	65.65	73.40	73.60	
50.55	31.00	32.10	35.95	36.75	39.10	39.75	42.45	48.20	49.35	49.50	51.50	51.90	54.15	59.90	62.10	65.65	73.45 73.65
50.60	31.05	32.15	35.95	36.75	39.15	39.75	42.50	48.20	49.40	51.55	54.15	59.90	62.15	65.70	73.50	73.70	
50.65	31.05	32.15	35.95	36.80	39.20	39.80	42.50	48.25	49.45	51.60	54.20	59.95	62.20	65.70	73.55	73.75	
50.70	31.10	32.15	36.00	36.80	39.25	39.80	42.55	48.25	49.60	52.00	54.20	59.95	62.25	65.75	73.60	73.80	
50.75	31.10	32.20	36.00	36.85	39.30	39.80	42.55	48.30	49.50	49.65	52.05	54.25	60.00	62.30	65.75	73.65	73.85
50.80	31.15	32.20	36.00	36.85	39.35	39.85	42.60	48.30	49.55	49.70	52.10	54.25	60.00	62.35	65.80	73.70	73.90
50.85	31.15	32.20	36.05	36.90	39.40	39.85	42.60	48.35	49.60	54.30	60.05	62.40	65.80	73.75	73.95		
50.90	31.20	32.25	36.05	36.90	39.45	39.85	42.65	48.35	51.80	54.30	60.05	62.45	65.85	73.80	74.00		
50.95	31.20	32.25	36.05	36.95	39.50	39.90	42.65	48.40	49.65	49.80	51.85	52.20	54.35	60.10	62.50	65.85	73.85 74.05
51.00	31.25	32.25	36.10	36.95	39.55	39.90	42.70	48.40	49.70	49.85	52.25	54.35	60.10	62.55	65.90	73.90	74.10
51.05	31.25	32.30	36.10	37.00	39.60	39.90	42.70	48.45	49.75	52.30	54.40	60.15	62.60	65.90	73.95	74.15	
51.10	31.30	32.30	36.10	37.00	39.65	39.95	42.75	48.45	54.40	60.15	62.65	65.95	74.00	74.20			
51.15	31.30	32.30	36.15	37.05	39.70	39.95	42.75	48.50	49.80	49.95	54.45	60.20	62.70	65.95	74.05	74.25	
51.20	31.35	32.35	36.15	37.05	39.75	39.95	42.80	48.50	49.85	50.00	50.30	52.40	54.45	60.20	62.75	66.00	74.10 74.30
51.25	31.35	32.35	36.15	37.10	39.80	40.00	42.80	48.55	49.90	50.05	50.35	52.45	54.50	60.25	62.80	66.00	74.15 74.35
51.30	31.40	32.35	36.20	37.10	39.85	40.00	42.85	48.55	52.50	54.50	60.25	62.85	66.05	74.20	74.40		
51.35	31.40	32.40	36.20	37.15	39.90	40.00	42.85	48.60	49.95	54.55	60.30	62.90	66.05	74.25	74.45		
51.40	31.45	32.40	36.20	37.15	39.95	40.05	42.90	48.60	50.00	54.55	60.30	62.95	66.10	74.30	74.50		
51.45	31.45	32.40	36.25	37.20	40.00	40.05	42.90	48.65	50.05	50.50	52.60	54.60	60.35	63.00	66.10	74.35	74.55
51.50	31.50	32.45	36.25	37.20	40.05	42.95	48.65	50.55	52.65	54.60	60.35	63.05	66.15	74.40	74.60		
51.55	31.50	32.45	36.25	37.25	40.10	42.95	48.70	50.10	50.60	52.70	54.65	60.40	63.10	66.15	74.45	74.65	
51.60	31.55	32.45	36.30	37.25	40.10	40.15	43.00	48.70	50.15	54.65	60.40	63.15	66.20	74.50	74.70		
51.65	31.55	32.50	36.30	37.30	40.10	40.20	43.00	48.75	50.20	54.70	60.45	63.20	66.20	74.55	74.75		
51.70	31.60	32.50	36.30	37.30	40.15	40.25	43.05	48.75	52.80	54.70	60.45	63.25	66.25	74.60	74.80		
51.75	31.60	32.50	36.35	37.35	40.15	40.30	43.05	48.80	50.25	50.75	52.85	54.75	60.50	63.30	66.25	74.65	74.85
51.80	31.65	32.55	36.35	37.35	40.15	40.35	43.10	48.80	50.30	50.80	52.90	54.75	60.50	63.35	66.30	74.70	74.90
51.85	31.65	32.55	36.35	37.40	40.20	40.40	43.10	48.85	50.35	50.85	54.80	60.55	63.40	66.30	74.75	74.95	
51.90	31.70	32.55	36.40	37.40	40.20	40.45	43.15	48.85	54.80	60.55	63.45	66.35	74.80	75.00			
51.95	31.70	32.60	36.40	37.45	40.20	40.50	43.15	48.90	50.40	53.00	54.85	60.60	63.50	66.35	74.85	75.05	
52.00	31.75	32.60	36.40	37.45	40.25	40.55	43.20	48.90	50.45	53.05	54.85	60.60	63.55	66.40	74.90	75.10	
52.05	31.75	32.60	36.45	37.50	40.25	40.60	43.20	48.95	50.50	51.00	53.10	54.90	60.65	63.60	66.40	74.95	75.15
52.10	31.80	32.65	36.45	37.50	40.25	40.65	43.25	48.95	51.05	54.90	60.65	63.65	66.45	75.00	75.20		
52.15	31.80	32.65	36.45	37.55	40.30	40.70	43.25	49.00	50.55	51.10	54.95	60.70	63.70	66.45	75.05	75.25	
52.20	31.85	32.65	36.50	37.55	40.30	40.75	43.30	49.00	50.60	53.20	54.95	60.70	63.75	66.50	75.10	75.30	
52.25	31.85	32.70	36.50	37.60	40.30	40.80	43.30	49.05	50.65	53.25	55.00	60.75	63.80	66.50	75.15	75.35	
52.30	31.90	32.70	36.50	37.60	40.35	40.85	43.35	49.05	53.30	55.00	60.75	63.85	66.55	75.20	75.40		
52.35	31.90	32.70	36.55	37.65	40.35	40.90	43.35	49.10	50.70	51.25	55.05	60.80	63.90	66.55	75.25	75.45	
52.40	31.95	32.75	36.55	37.65	40.35	40.95	43.40	49.10	50.75	51.30	55.05	60.80	63.95	66.60	75.30	75.50	
52.45	31.95	32.75	36.55	37.70	40.40	41.00	43.40	49.15	50.80	51.35	53.40	55.10	60.85	64.00	66.60	75.35	75.55
52.50	32.00	32.75	36.60	37.70	40.40	41.05	43.45	49.15	53.45	55.10	60.85	64.05	66.65	75.40	75.60		
52.55	32.00	32.80	36.60	37.75	40.40	41.10	43.45	49.20	50.85	53.50	55.15	60.90	64.10	66.65	75.45	75.65	
52.60	32.05	32.80	36.60	37.75	40.45	41.15	43.50	49.20	50.90	55.15	60.90	64.15	66.70	75.50	75.70		
52.65	32.05	32.80	36.65	37.80	40.45	41.20	43.50	49.25	50.95	51.50	55.20	60.95	64.20	66.70	75.55	75.75	
52.70	32.10	32.85	36.65	37.80	40.45	41.25	43.55	49.25	51.55	53.60	55.20	60.95	64.25	66.75	75.60	75.80	
52.75	32.10	32.85	36.65	37.85	40.50	41.30	43.55	49.30	51.00	51.60	53.65	55.25	61.00	64.30	66.75	75.65	75.85
52.80	32.10	32.85	36.70	37.85	40.50	41.35	43.60	49.30	51.05	55.25	61.00	64.35	66.80	75.70	75.90		

TABLE II-1 (Sheet 11 of 23)

RCVR FREQ. (MHz)	RESTRICTED TRANSMITTER FREQUENCIES (MHz)																
52.85	32.15	32.90	36.70	37.90	40.50	41.40	43.60	49.35	51.10	55.30	61.05	64.40	66.80	75.75	75.95		
52.90	30.00	32.20	32.90	36.70	37.90	40.55	41.45	43.65	49.35	55.30	61.05	64.45	66.85	75.80			
52.95	30.05	32.20	32.90	36.75	37.95	40.55	41.50	43.65	49.40	51.15	51.75	55.35	61.10	64.50	66.85	75.85	
53.00	30.10	32.20	32.95	36.75	37.95	40.55	41.55	43.70	47.25	49.40	51.45	51.95	54.00	55.35	56.40	61.10	64.55	66.90
53.05	29.95	30.15	32.25	32.95	36.75	38.00	40.60	41.60	43.70	47.30	49.45	51.50	55.40	56.50	61.15	64.60	66.90	
53.10	30.00	30.20	32.30	32.95	36.80	38.00	40.60	41.65	43.75	47.35	49.45	51.55	55.40	56.55	61.15	64.65	66.95	
53.15	30.05	30.25	32.30	33.00	36.80	38.05	40.60	41.70	43.75	47.40	49.50	51.65	52.15	54.20	55.45	56.65	61.20	64.70	66.95
53.20	30.10	30.30	32.35	33.00	36.80	38.05	40.65	41.75	43.80	47.45	49.50	51.70	52.20	55.45	56.70	61.20	64.75	67.00	
53.25	30.15	30.35	32.35	33.00	36.85	38.10	40.65	41.80	43.80	47.50	49.55	51.75	52.25	55.50	56.80	61.25	64.80	67.00	
53.30	30.20	30.40	32.35	33.05	36.85	38.10	40.65	41.85	43.85	47.55	49.55	51.85	54.40	55.50	56.85	61.25	64.85	67.05	
53.35	30.25	30.45	32.40	33.05	36.85	38.15	40.70	41.90	43.85	47.60	49.60	51.90	55.55	56.95	61.30	64.90	67.05		
53.40	30.30	30.50	32.45	33.05	36.90	38.15	40.70	41.95	43.90	47.65	49.60	51.95	52.45	55.55	57.00	61.30	64.95	67.10	
53.45	30.35	30.55	32.45	33.10	36.90	38.20	40.70	42.00	43.90	47.70	49.65	52.05	52.50	54.60	55.60	57.10	61.35	65.00	67.10
53.50	30.40	30.60	32.45	33.10	36.90	38.20	40.75	42.05	43.95	47.75	49.65	52.10	52.30	55.60	57.15	61.35	65.05	67.15	
53.55	30.45	30.65	32.50	33.10	36.95	38.25	40.75	42.10	43.95	47.80	49.70	52.15	55.65	57.25	61.40	65.10	67.15		
53.60	30.50	30.70	32.55	33.15	36.95	38.25	40.75	42.15	44.00	47.85	49.70	52.25	52.70	54.80	55.65	57.30	61.40	65.15	67.20
53.65	30.55	30.75	32.55	33.15	36.95	38.30	40.80	42.20	44.00	47.90	49.75	52.30	52.50	52.75	55.70	57.40	61.45	65.20	67.20
53.70	30.60	30.80	32.60	33.15	37.00	38.30	40.80	42.25	44.05	47.95	49.75	52.35	52.55	52.80	55.70	57.45	61.45	65.25	67.25
53.75	30.65	30.85	32.60	33.20	37.00	38.35	40.80	42.30	44.05	48.00	49.80	52.45	55.75	57.55	61.50	65.30	67.25		
53.80	30.70	30.90	32.60	33.20	37.00	38.35	40.85	42.35	44.10	48.05	49.80	52.50	55.75	57.60	61.50	65.35	67.30		
53.85	30.75	30.95	32.65	33.20	37.05	38.40	40.85	42.40	44.10	48.10	49.85	52.55	52.75	53.00	55.80	57.70	61.55	65.40	67.30
53.90	30.80	31.00	32.70	33.25	37.05	38.40	40.85	42.45	44.15	48.15	49.85	52.65	53.05	55.80	57.75	61.55	65.45	67.35	
53.95	30.85	31.05	32.70	33.25	37.05	38.45	40.90	42.50	44.15	48.20	49.90	52.70	55.85	57.85	61.60	65.50	67.35		
54.00	30.90	31.10	32.70	33.25	37.10	38.45	40.90	42.55	44.20	48.25	49.90	52.75	52.95	55.85	57.90	61.60	65.55	67.40	
54.05	30.95	31.15	32.75	33.30	37.10	38.50	40.90	42.60	44.20	48.30	49.95	52.85	53.00	53.25	55.90	58.00	61.65	65.60	67.40
54.10	31.00	31.20	32.80	33.30	37.10	38.50	40.95	42.65	44.25	48.35	49.95	52.90	55.90	58.05	61.65	65.65	67.45		
54.15	31.05	31.25	32.80	33.30	37.15	38.55	40.95	42.70	44.25	48.40	50.00	52.95	55.95	58.15	61.70	65.70	67.45		
54.20	31.10	31.30	32.85	33.35	37.15	38.55	40.95	42.75	44.30	48.45	50.00	53.05	53.20	55.95	58.20	61.70	65.75	67.50	
54.25	31.15	31.35	32.85	33.35	37.15	38.60	41.00	42.80	44.30	48.50	50.05	53.10	56.00	58.30	61.75	65.80	67.50		
54.30	31.20	31.40	32.85	33.35	37.20	38.60	41.00	42.85	44.35	48.55	50.05	53.15	56.00	58.35	61.75	65.85	67.55		
54.35	31.25	31.45	32.90	33.40	37.20	38.65	41.00	42.90	44.35	48.60	50.10	53.25	53.40	55.15	56.05	58.45	61.80	65.90	67.55
54.40	31.30	31.50	32.95	33.40	37.20	38.65	41.05	42.95	44.40	48.65	50.10	53.30	53.45	56.05	58.50	61.80	65.95	67.60	
54.45	31.35	31.55	32.95	33.40	37.25	38.70	41.05	43.00	44.40	48.70	50.15	53.35	55.30	56.10	58.60	61.85	66.00	67.60	
54.50	31.40	31.60	32.95	33.45	37.25	38.70	41.05	43.05	44.45	48.75	50.15	53.45	55.35	56.10	58.65	61.85	66.05	67.65	
54.55	31.45	31.65	33.00	33.45	37.25	38.75	41.10	43.10	44.45	48.80	50.20	53.50	53.65	56.15	58.75	61.90	66.10	67.65	
54.60	31.50	31.70	33.05	33.45	37.30	38.75	41.10	43.15	44.50	48.85	50.20	53.55	55.50	56.15	58.80	61.90	66.15	67.70	
54.65	31.55	31.75	33.05	33.50	37.30	38.80	41.10	43.20	44.50	48.90	50.25	53.65	55.55	56.20	58.90	61.95	66.20	67.70	
54.70	31.60	31.80	33.10	33.50	37.30	38.80	41.15	43.25	44.55	48.95	50.25	53.70	53.85	56.20	58.95	61.95	66.25	67.75	
54.75	31.65	31.85	33.10	33.50	37.35	38.85	41.15	43.30	44.55	49.00	50.30	53.75	53.90	55.70	56.25	59.05	62.00	66.30	67.75
54.80	31.70	31.90	33.10	33.55	37.35	38.85	41.15	43.35	44.60	49.05	50.30	53.85	55.75	56.25	59.10	62.00	66.35	67.80	
54.85	31.75	31.95	33.15	33.55	37.35	38.90	41.20	43.40	44.60	49.10	50.35	53.90	56.30	59.20	62.05	66.40	67.80		
54.90	31.80	32.00	33.20	33.55	37.40	38.90	41.20	43.45	44.65	49.15	50.35	53.95	55.90	56.30	59.25	62.05	66.45	67.85	
54.95	31.85	32.05	33.20	33.60	37.40	38.95	41.20	43.50	44.65	49.20	50.40	54.05	55.95	56.35	59.35	62.10	66.50	67.85	
55.00	31.90	32.10	33.20	33.60	37.40	38.95	41.25	43.55	44.70	49.25	50.40	54.10	56.35	59.40	62.10	66.55	67.90		
55.05	31.95	32.15	33.25	33.60	37.45	39.00	41.25	43.60	44.70	49.30	50.45	54.15	56.10	56.40	59.50	62.15	66.60	67.90	
55.10	32.00	32.20	33.30	33.65	37.45	39.00	41.25	43.65	44.75	49.35	50.45	54.25	56.15	56.40	59.55	62.15	66.65	67.95	
55.15	32.05	32.25	33.30	33.65	37.45	39.05	41.30	43.70	44.75	49.40	50.50	54.30	55.95	56.45	59.65	62.20	66.70	67.95	
55.20	32.10	32.30	33.35	33.65	37.50	39.05	41.30	43.75	44.80	49.45	50.50	54.35	56.30	56.45	59.70	62.20	66.75	68.00	

TABLE II-1 (Sheet 12 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																		
55.25	32.15	32.35	33.35	33.70	37.50	39.10	41.30	43.80	44.80	49.50	50.55	54.45	56.35	56.50	59.80	62.25	66.80	68.00	
55.30	32.20	32.40	33.35	33.70	37.50	39.10	41.35	43.85	44.85	49.55	50.55	56.15	56.50	59.85	62.25	66.85	68.05		
55.35	32.25	32.45	33.40	33.70	37.55	39.15	41.35	43.90	44.85	49.60	50.60	56.20	56.50	56.55	59.95	62.30	66.90	68.05	
55.40	32.30	32.50	33.45	33.75	37.55	39.15	41.35	43.95	44.90	49.65	50.60	56.55	60.00	62.30	66.95	68.10			
55.45	32.35	32.55	33.45	33.75	37.55	39.20	41.40	44.00	44.90	49.70	50.65	56.60	60.10	62.35	67.00	68.10			
55.50	32.40	32.60	33.45	33.75	37.60	39.20	41.40	44.05	44.95	49.75	50.65	56.40	56.60	56.70	60.15	62.35	67.05	68.15	
55.55	32.45	32.65	33.50	33.80	37.60	39.25	41.40	44.10	44.95	49.80	50.70	56.45	56.65	56.75	60.25	62.40	67.10	68.15	
55.60	30.00	32.50	32.70	33.55	33.80	37.60	39.25	41.45	44.15	45.00	49.85	50.70	56.65	60.30	62.40	67.15	68.20		
55.65	30.00	32.55	32.75	33.55	33.80	37.65	39.30	41.45	44.20	45.00	49.90	50.75	56.70	60.40	62.45	67.20	68.20		
55.70	30.00	32.60	32.80	33.60	33.85	37.65	39.30	41.45	44.25	45.05	49.95	50.75	56.65	56.70	60.45	62.45	67.25	68.25	
55.75	30.05	32.65	32.85	33.60	33.85	37.65	39.35	41.50	44.30	45.05	50.00	50.80	56.70	56.75	60.55	62.50	67.30	68.25	
55.80	30.05	32.70	32.90	33.60	33.85	37.70	39.35	41.50	44.35	45.10	50.05	50.80	56.75	60.60	62.50	67.35	68.30		
55.85	30.05	32.75	32.95	33.65	33.90	37.70	39.35	41.50	44.40	45.10	50.10	50.85	56.80	60.70	62.55	67.40	68.30		
55.90	30.10	32.80	33.00	33.70	33.90	37.70	39.40	41.55	44.45	45.15	50.15	50.85	56.80	56.90	60.75	62.55	67.45	68.35	
55.95	30.10	32.85	33.05	33.70	33.90	37.75	39.45	41.55	44.50	45.15	50.20	50.90	56.85	56.95	60.85	62.60	67.50	68.35	
56.00	30.10	32.90	33.10	33.70	33.95	37.75	39.45	41.55	44.55	45.20	50.25	50.90	56.85	60.90	62.60	67.55	68.40		
56.05	30.15	32.95	33.15	33.75	33.95	37.75	39.50	41.60	44.60	45.20	50.30	50.95	56.90	61.00	62.65	67.60	68.40		
56.10	30.15	33.00	33.20	33.80	33.95	37.80	39.50	41.60	44.65	45.20	50.35	50.95	57.15	61.05	62.65	67.65	68.45		
56.15	30.15	33.05	33.25	33.80	34.00	37.80	39.55	41.60	44.70	45.25	50.40	51.00	57.20	61.15	62.70	67.70	68.45		
56.20	30.20	33.10	33.30	33.85	34.00	37.80	39.55	41.65	44.75	45.30	50.45	51.00	61.20	62.70	67.75	68.50			
56.25	30.20	33.15	33.35	33.85	34.00	37.85	39.60	41.65	44.80	45.30	50.50	51.05	61.30	62.75	67.80	68.50			
56.30	30.20	33.20	33.40	33.85	34.05	37.85	39.60	41.65	44.85	45.35	50.55	51.05	57.40	61.35	62.75	67.85	68.55		
56.35	30.25	33.25	33.45	33.90	34.05	37.85	39.60	41.70	44.90	45.35	50.60	51.10	57.45	61.45	62.80	67.90	68.55		
56.40	30.25	33.30	33.50	33.95	34.05	37.90	39.65	41.70	44.95	45.40	50.65	51.10	61.50	62.80	67.95	68.60			
56.45	30.25	33.35	33.55	33.95	34.10	37.90	39.70	41.70	45.00	45.40	50.70	51.15	61.60	62.85	68.00	68.60			
56.50	30.30	33.40	33.60	33.95	34.10	37.90	39.70	41.75	45.05	45.45	50.75	51.15	57.65	61.65	62.85	68.05	68.65		
56.55	30.30	33.45	33.65	34.00	34.10	37.95	39.75	41.75	45.10	45.45	50.80	51.20	57.35	57.70	61.75	62.90	68.10	68.65	
56.60	30.30	33.50	33.70	34.05	34.15	37.95	39.75	41.75	45.15	45.45	50.85	51.20	61.80	62.90	68.15	68.70			
56.65	30.35	33.55	33.75	34.05	34.15	37.95	39.80	41.80	45.20	45.50	50.90	51.25	57.50	61.90	62.95	68.20	68.70		
56.70	30.35	33.60	33.80	34.10	34.15	38.00	39.80	41.80	45.25	45.55	50.95	51.25	57.55	57.90	61.95	62.95	68.25	68.75	
56.75	30.35	33.65	33.85	34.10	34.20	38.00	39.85	41.80	45.30	45.55	51.00	51.30	57.95	63.00	68.30	68.75			
56.80	30.40	33.70	33.90	34.10	34.20	38.00	39.85	41.85	45.35	45.60	51.05	51.30	63.00	68.35	68.80				
56.85	30.40	33.75	33.95	34.15	34.20	38.05	39.85	41.85	45.40	45.60	51.10	51.35	57.75	63.05	68.40	68.80			
56.90	30.40	33.80	34.00	34.20	34.25	38.05	39.90	41.85	45.45	45.65	51.15	51.35	63.05	68.45	68.85				
56.95	30.45	33.85	34.05	34.20	34.25	38.05	39.95	41.90	45.50	45.65	51.20	51.40	63.10	68.50	68.85				
57.00	30.45	33.90	34.10	34.20	34.25	38.10	39.95	41.90	45.55	45.70	51.25	51.40	55.70	57.95	63.10	68.55	68.90		
57.05	30.45	33.95	34.15	34.25	34.30	38.10	40.00	41.90	45.60	45.70	51.30	51.45	58.00	63.15	68.60	68.90			
57.10	30.50	34.00	34.20	34.30	38.10	40.00	41.95	45.65	45.70	51.35	51.45	63.15	68.65	68.95					
57.15	30.50	34.05	34.25	34.30	38.15	40.05	41.95	45.70	45.75	51.40	51.50	58.15	63.20	68.70	68.95				
57.20	30.50	34.10	34.30	34.35	38.15	40.05	41.95	45.75	45.80	51.45	51.50	55.95	58.20	63.20	68.75	69.00			
57.25	30.55	34.15	34.35	38.15	40.10	42.00	45.80	51.1-64.6				68.80	69.00						
57.30	30.55	34.20	34.35	34.40	38.20	40.10	42.00	45.85	51.55	63.25	68.85	69.05							
57.35	30.55	34.25	34.40	34.45	38.20	40.15	42.00	45.85	45.90	51.60	58.40	63.30	68.90	69.05					
57.40	30.60	34.30	34.40	34.45	34.50	38.20	40.15	42.05	45.90	45.95	51.60	51.65	63.30	68.95	69.10				
57.45	30.60	34.35	34.40	34.45	34.55	38.25	40.20	42.05	45.90	46.00	51.65	51.70	56.25	63.35	69.00	69.10			
57.50	30.60	34.40	34.45	34.60	38.25	40.20	42.05	45.95	46.05	51.65	51.75	56.30	58.60	63.35	69.05	69.15			
57.55	30.65	34.45	34.50	34.65	38.25	40.25	42.10	45.95	46.10	51.70	51.80	58.65	63.40	69.10	69.15				
57.60	30.65	34.45	34.50	34.55	34.70	38.30	40.25	42.10	45.95	46.15	51.70	51.85	63.40	69.15	69.20				

TABLE II-1 (Sheet 13 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																	
55.25:	32.15	32.35	33.35	33.70	37.50	39.10	41.30	43.80	44.80	49.50	50.55	54.45	56.35	56.50	59.80	62.25	66.80	68.00
55.30:	32.20	32.40	33.35	33.70	37.50	39.10	41.35	43.85	44.85	49.55	50.55	54.15	56.50	59.85	62.25	66.85	68.05	
55.35:	32.25	32.45	33.40	33.70	37.55	39.15	41.35	43.90	44.85	49.60	50.60	54.20	56.50	56.55	59.95	62.30	66.90	68.05
55.40:	32.30	32.50	33.45	33.75	37.55	39.15	41.35	43.95	44.90	49.65	50.60	54.55	60.00	62.30	66.95	68.10		
55.45:	32.35	32.55	33.45	33.75	37.55	39.20	41.40	44.00	44.90	49.70	50.65	54.60	60.10	62.35	67.00	68.10		
55.50:	32.40	32.60	33.45	33.75	37.60	39.20	41.40	44.05	44.95	49.75	50.65	54.40	54.60	56.70	60.15	62.35	67.05	68.15
55.55:	32.45	32.65	33.50	33.80	37.60	39.25	41.40	44.10	44.95	49.80	50.70	54.45	54.65	56.75	60.25	62.40	67.10	68.15
55.60:	30.00	32.50	32.70	33.55	33.80	37.60	39.25	41.45	44.15	45.00	49.85	50.70	56.65	60.30	62.40	67.15	68.20	
55.65:	30.00	32.55	32.75	33.55	33.80	37.65	39.30	41.45	44.20	45.00	49.90	50.75	56.70	60.40	62.45	67.20	68.20	
55.70:	30.00	32.60	32.80	33.60	33.85	37.65	39.30	41.45	44.25	45.05	49.95	50.75	56.65	56.70	60.45	62.45	67.25	68.25
55.75:	30.05	32.65	32.85	33.60	33.85	37.65	39.35	41.50	44.30	45.05	50.00	50.80	56.70	56.75	60.55	62.50	67.30	68.25
55.80:	30.05	32.70	32.90	33.60	33.85	37.70	39.35	41.50	44.35	45.10	50.05	50.80	56.75	60.60	62.50	67.35	68.30	
55.85:	30.05	32.75	32.95	33.65	33.90	37.70	39.35	41.50	44.40	45.10	50.10	50.85	56.80	60.70	62.55	67.40	68.30	
55.90:	30.10	32.80	33.00	33.70	33.90	37.70	39.40	41.55	44.45	45.15	50.15	50.85	56.80	56.90	60.75	62.55	67.45	68.35
55.95:	30.10	32.85	33.05	33.70	33.90	37.75	39.45	41.55	44.50	45.15	50.20	50.90	56.85	56.95	60.85	62.60	67.50	68.35
56.00:	30.10	32.90	33.10	33.70	33.95	37.75	39.45	41.55	44.55	45.20	50.25	50.90	56.85	60.90	62.60	67.55	68.40	
56.05:	30.15	32.95	33.15	33.75	33.95	37.75	39.50	41.60	44.60	45.20	50.30	50.95	56.90	61.00	62.65	67.60	68.40	
56.10:	30.15	33.00	33.20	33.80	33.95	37.80	39.50	41.60	44.65	45.20	50.35	50.95	57.15	61.05	62.65	87.65	68.45	
56.15:	30.15	33.05	33.25	33.80	34.00	37.80	39.55	41.60	44.70	45.25	50.40	51.00	57.20	61.15	62.70	67.70	68.45	
56.20:	30.20	33.10	33.30	33.85	34.00	37.80	39.55	41.65	44.75	45.30	50.45	51.00	61.20	62.70	67.75	68.50		
56.25:	30.20	33.15	33.35	33.85	34.00	37.85	39.60	41.65	44.80	45.30	50.50	51.05	61.30	62.75	67.80	68.50		
56.30:	30.20	33.20	33.40	33.85	34.05	37.85	39.60	41.65	44.85	45.35	50.55	51.05	57.40	61.35	62.75	67.85	68.55	
56.35:	30.25	33.25	33.45	33.90	34.05	37.85	39.60	41.70	44.90	45.35	50.60	51.10	57.45	61.45	62.80	67.90	68.55	
56.40:	30.25	33.30	33.50	33.95	34.05	37.90	39.65	41.70	44.95	45.40	50.65	51.10	61.50	62.80	67.95	68.60		
56.45:	30.25	33.35	33.55	33.95	34.10	37.90	39.70	41.70	45.00	45.40	50.70	51.15	61.60	62.85	68.00	68.60		
56.50:	30.30	33.40	33.60	33.95	34.10	37.90	39.70	41.75	45.05	45.45	50.75	51.15	57.65	61.65	62.85	68.05	68.65	
56.55:	30.30	33.45	33.65	34.00	34.10	37.95	39.75	41.75	45.10	45.45	50.80	51.20	57.35	57.70	61.75	62.90	68.10	68.65
56.60:	30.30	33.50	33.70	34.05	34.15	37.95	39.75	41.75	45.15	45.45	50.85	51.20	61.80	62.90	68.15	68.70		
56.65:	30.35	33.55	33.75	34.05	34.15	37.95	39.80	41.80	45.20	45.50	50.90	51.25	57.50	61.90	62.95	68.20	68.70	
56.70:	30.35	33.60	33.80	34.10	34.15	38.00	39.80	41.80	45.25	45.55	50.95	51.25	57.55	57.90	61.95	62.95	68.25	68.75
56.75:	30.35	33.65	33.85	34.10	34.20	38.00	39.85	41.80	45.30	45.55	51.00	51.30	57.95	63.00	68.30	68.75		
56.80:	30.40	33.70	33.90	34.10	34.20	38.00	39.85	41.85	45.35	45.60	51.05	51.30	63.00	68.35	68.80			
56.85:	30.40	33.75	33.95	34.15	34.20	38.05	39.85	41.85	45.40	45.60	51.10	51.35	57.75	63.05	68.40	68.80		
56.90:	30.40	33.80	34.00	34.20	34.25	38.05	39.90	41.85	45.45	45.65	51.15	51.35	63.05	68.45	68.85			
56.95:	30.45	33.85	34.05	34.20	34.25	38.05	39.95	41.90	45.50	45.65	51.20	51.40	63.10	68.50	68.85			
57.00:	30.45	33.90	34.10	34.20	34.25	38.10	39.95	41.90	45.55	45.70	51.25	51.40	56.70	57.95	63.10	68.55	68.90	
57.05:	30.45	33.95	34.15	34.25	34.30	38.10	40.00	41.90	45.60	45.70	51.30	51.45	58.00	63.15	68.60	68.90		
57.10:	30.50	34.00	34.20	34.30	38.10	40.00	41.95	45.65	45.70	51.35	51.45	63.15	68.65	68.95				
57.15:	30.50	34.05	34.25	34.30	38.15	40.05	41.95	45.70	45.75	51.40	51.50	58.15	63.20	68.70	68.95			
57.20:	30.50	34.10	34.30	34.35	38.15	40.05	41.95	45.75	45.80	51.45	51.50	56.95	58.20	63.20	68.75	69.00		
57.25:	30.55	34.15	34.35	38.15	40.10	42.00	45.80	51.1-64.6				68.80	69.00					
57.30:	30.55	34.20	34.35	34.40	38.20	40.10	42.00	45.85	51.55	63.25	68.85	69.05						
57.35:	30.55	34.25	34.40	34.45	38.20	40.15	42.00	45.85	45.90	51.60	58.40	63.30	68.90	69.05				
57.40:	30.40	34.30	34.40	34.45	34.50	38.20	40.15	42.05	45.90	45.95	51.60	51.65	63.30	68.95	69.10			
57.45:	30.40	34.35	34.40	34.45	34.55	38.25	40.20	42.05	45.90	46.00	51.65	51.70	56.25	63.35	69.00	69.10		
57.50:	30.40	34.40	34.45	34.60	38.25	40.20	42.05	45.95	46.05	51.65	51.75	56.30	58.60	63.35	69.05	69.15		
57.55:	30.45	34.45	34.50	34.65	38.25	40.25	42.10	45.95	46.10	51.70	51.80	58.65	63.40	69.10	69.15			
57.60:	30.45	34.45	34.50	34.55	34.70	38.30	40.25	42.10	45.95	46.15	51.70	51.85	63.40	69.15	69.20			

TABLE II-1 (Sheet 14 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																		
57.65	30.65	34.50	34.56	34.75	38.30	40.30	42.10	46.00	46.20	51.75	51.90	58.80	63.45	69.20					
57.70	30.70	34.50	34.60	34.80	38.30	40.30	42.15	46.05	46.25	51.75	51.95	58.55	58.85	63.45	69.25				
57.75	30.70	34.50	34.60	34.65	34.85	38.35	40.35	42.15	46.05	46.30	51.1-64.6				69.25	69.30			
57.80	30.70	34.55	34.60	34.70	34.90	38.35	40.35	42.15	46.10	46.35	51.80	52.05	63.50	69.30	69.35				
57.85	30.75	34.55	34.65	34.75	34.95	38.35	40.40	42.20	46.10	46.40	51.85	52.10	59.05	63.55	69.30	69.40			
57.90	30.75	34.55	34.70	34.80	35.00	38.40	40.40	42.20	46.15	46.45	51.85	52.15	63.55	69.35	69.45				
57.95	30.75	34.60	34.70	34.85	35.05	38.40	40.45	42.20	46.15	46.50	51.90	52.20	56.85	63.60	69.35	69.50			
58.00	30.80	34.60	34.70	34.90	35.10	38.40	40.45	42.25	46.20	46.55	51.90	52.25	56.90	59.25	63.60	69.40	69.55		
58.05	30.80	34.60	34.75	34.95	35.15	38.45	40.50	42.25	46.20	46.60	51.95	52.30	59.30	63.65	69.40	69.60			
58.10	30.80	34.65	34.80	35.00	35.20	38.45	40.50	42.25	46.20	46.65	51.95	52.35	63.65	69.45	69.65				
58.15	30.85	34.65	34.80	35.05	35.25	38.45	40.55	42.30	46.25	46.70	52.00	52.40	63.70	69.45	69.70				
58.20	30.85	34.65	34.85	35.10	35.30	38.50	40.55	42.30	46.30	46.75	52.00	52.45	57.15	63.70	69.50	69.75			
58.25	30.85	34.70	34.85	35.15	35.35	38.50	40.60	42.30	46.30	46.80	52.05	52.50	57.20	63.75	69.50	69.80			
58.30	30.90	34.70	34.85	35.20	35.40	38.50	40.60	42.35	46.35	46.85	52.05	52.55	63.75	69.55	69.85				
58.35	30.90	34.70	34.90	35.25	35.45	38.55	40.65	42.35	46.35	46.90	52.10	52.60	63.80	69.55	69.90				
58.40	30.90	34.75	34.95	35.30	35.50	38.55	40.65	42.35	46.40	46.95	52.10	52.65	63.80	69.60	69.95				
58.45	30.95	34.75	34.95	35.35	35.55	38.55	40.70	42.40	46.40	47.00	52.15	52.70	57.20	57.45	63.85	69.60	70.00		
58.50	30.95	34.75	34.95	35.40	35.60	38.60	40.70	42.40	46.45	47.05	52.15	52.75	57.25	57.50	63.85	69.65	70.05		
58.55	30.95	34.80	35.00	35.45	35.65	38.60	40.75	42.40	46.45	47.10	52.20	52.80	63.90	69.65	70.10				
58.60	31.00	34.80	35.05	35.50	35.70	38.60	40.75	42.45	46.45	47.15	52.20	52.85	63.90	69.70	70.15				
58.65	31.00	34.80	35.05	35.55	35.75	38.65	40.80	42.45	46.50	47.20	52.25	52.90	57.45	63.95	69.70	70.20			
58.70	31.00	34.85	35.10	35.60	35.80	38.65	40.80	42.45	46.55	47.25	52.25	52.95	57.50	57.75	63.95	69.75	70.25		
58.75	31.05	34.85	35.10	35.65	35.85	38.65	40.85	42.50	46.55	47.30	52.30	53.00	57.80	64.00	69.75	70.30			
58.80	31.05	34.85	35.10	35.70	35.90	38.70	40.85	42.50	46.60	47.35	52.30	53.05	64.00	69.80	70.35				
58.85	31.05	34.90	35.15	35.75	35.95	38.70	40.90	42.50	46.60	47.40	52.35	53.10	57.70	64.05	69.80	70.40			
58.90	31.10	34.90	35.20	35.80	36.00	38.70	40.90	42.55	46.65	47.45	52.35	53.15	57.75	64.05	69.85	70.45			
58.95	31.10	34.90	35.20	35.85	36.05	38.75	40.95	42.55	46.65	47.50	52.40	53.20	58.05	64.10	69.85	70.50			
59.00	31.10	34.95	35.20	35.90	36.10	38.75	40.95	42.55	46.70	47.55	52.40	53.25	58.10	64.10	69.90	70.55			
59.05	31.15	34.95	35.25	35.95	36.15	38.75	41.00	42.60	46.70	47.60	52.45	53.30	57.95	64.15	69.90	70.60			
59.10	31.15	34.95	35.30	36.00	36.20	38.80	41.00	42.60	46.70	47.65	52.45	53.35	58.00	64.15	69.95	70.65			
59.15	31.15	35.00	35.30	36.05	36.25	38.80	41.05	42.60	46.75	47.70	52.50	53.40	64.20	69.95	70.70				
59.20	31.20	35.00	35.35	36.10	36.30	38.80	41.05	42.65	46.80	47.75	52.50	53.45	58.35	64.20	70.00	70.75			
59.25	31.20	35.00	35.35	36.15	36.35	38.85	41.10	42.65	46.80	47.80	52.55	53.50	58.20	58.40	64.25	70.00	70.80		
59.30	31.20	35.05	35.35	36.20	36.40	38.85	41.10	42.65	46.85	47.85	52.55	53.55	58.25	64.25	70.05	70.85			
59.35	31.25	35.05	35.40	36.25	36.45	38.85	41.15	42.70	46.85	47.90	52.60	53.60	64.30	70.05	70.90				
59.40	31.25	35.05	35.45	36.30	36.50	38.90	41.15	42.70	46.90	47.95	52.60	53.65	58.55	64.30	70.10	70.95			
59.45	31.25	35.10	35.45	36.35	36.55	38.90	41.20	42.70	46.90	48.00	52.65	53.70	58.45	58.60	58.65	64.35	70.10	71.00	
59.50	31.30	35.10	35.45	36.40	36.60	38.90	41.20	42.75	46.95	48.05	52.65	53.75	58.50	58.60	64.35	70.15	71.05		
59.55	31.30	35.10	35.50	36.45	36.65	38.95	41.25	42.75	46.95	48.10	52.70	53.80	58.65	64.40	70.15	71.10			
59.60	31.30	35.15	35.55	36.50	36.70	38.95	41.25	42.75	46.95	48.15	52.70	53.85	58.65	64.40	70.20	71.15			
59.65	31.35	35.15	35.55	36.55	36.75	38.95	41.30	42.80	47.00	48.20	52.75	53.90	58.70	64.45	70.20	71.20			
59.70	31.35	35.15	35.60	36.60	36.80	39.00	41.30	42.80	47.05	48.25	52.75	53.95	58.70	58.75	64.45	70.25	71.25		
59.75	31.35	35.20	35.60	36.65	36.85	39.00	41.35	42.80	47.05	48.30	52.80	54.00	58.75	64.50	70.25	71.30			
59.80	31.40	35.20	35.60	36.70	36.90	39.00	41.35	42.85	47.10	48.35	52.80	53.00	54.05	58.75	64.50	70.30	71.35		
59.85	30.00	31.40	35.20	35.65	36.75	36.95	39.05	41.40	42.85	47.10	48.40	52.85	53.00	54.10	58.80	58.95	64.55	70.30	71.40
59.90	30.00	31.40	35.25	35.70	36.80	37.00	39.05	41.40	42.85	47.15	48.45	52.85	53.05	54.15	58.35	58.80	59.00	64.55	70.35	71.45
59.95	30.00	30.05	31.45	35.25	35.70	36.85	37.05	39.05	41.45	42.90	47.15	48.50	52.90	53.05	54.20	58.40	58.85	64.60	70.35	71.50
60.00	30.00	30.05	31.45	35.25	35.70	36.90	37.10	39.10	41.45	42.90	47.20	48.55	52.90	53.10	54.25	58.45	58.85	64.60	70.40	71.55

TABLE II-1 (Sheet 15 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)
60.05	30.00 30.05 30.10 31.45 35.30 35.75 36.95 37.15 39.10 41.50 42.90 47.20 48.60 52.95 53.10 54.30 58.90 59.20 64.65 70.40 71.60
60.10	30.00 30.05 30.10 31.50 35.30 35.80 37.00 37.20 39.10 41.50 42.95 47.20 48.65 52.95 53.15 54.35 58.90 59.25 64.65 70.45 71.65
60.15	30.05 30.10 30.15 31.50 35.30 35.80 37.05 37.25 39.15 41.55 42.95 47.25 48.70 53.15 54.40 58.95 60.95 64.70 70.45 71.70
60.20	30.05 30.10 30.15 31.50 35.35 35.85 37.10 37.30 39.15 41.55 42.95 47.30 48.75 53.20 54.45 58.70 58.95 61.05 64.70 70.50 71.75
60.25	30.10 30.15 30.20 31.55 35.35 35.85 37.15 37.35 39.15 41.60 43.00 47.30 48.80 53.20 54.50 58.75 59.00 59.45 61.10 64.75 70.50 71.80
60.30	30.10 30.15 30.20 31.55 35.35 35.85 37.20 37.40 39.20 41.60 43.00 47.35 48.85 53.25 54.55 58.80 59.00 61.15 64.75 70.55 71.85
60.35	30.15 30.20 30.25 31.55 35.40 35.90 37.25 37.45 39.20 41.65 43.00 47.35 48.90 53.25 54.60 59.05 61.25 64.80 70.55 71.90
60.40	30.15 30.20 30.25 31.60 35.40 35.95 37.30 37.50 39.20 41.65 43.05 47.40 48.95 53.30 54.65 59.05 61.30 64.80 70.60 71.95
60.45	30.20 30.25 30.30 31.60 35.40 35.95 37.35 37.55 39.25 41.70 43.05 47.40 49.00 53.30 54.70 59.10 61.35 64.85 70.60 72.00
60.50	30.20 30.25 30.30 31.60 35.45 35.95 37.40 37.60 39.25 41.70 43.05 47.45 49.05 53.35 54.75 59.05 59.10 61.45 64.85 70.65 72.05
60.55	30.25 30.30 30.35 31.65 35.45 36.00 37.45 37.65 39.25 41.75 43.10 47.45 49.10 53.35 54.80 59.10 59.15 61.50 64.90 70.65 72.10
60.60	30.25 30.30 30.35 31.65 35.45 36.05 37.50 37.70 39.30 41.75 43.10 47.45 49.15 53.40 54.85 59.15 61.55 64.90 70.70 72.15
60.65	30.30 30.35 30.40 31.65 35.50 36.05 37.55 37.75 39.30 41.80 43.10 47.50 49.20 53.40 54.90 59.20 61.60 61.65 64.95 70.70 72.20
60.70	30.30 30.35 30.40 31.70 35.50 36.10 37.60 37.80 39.30 41.80 43.15 47.55 49.25 53.45 54.95 59.20 61.55 61.70 64.95 70.75 72.25
60.75	30.35 30.40 30.45 31.70 35.50 36.10 37.65 37.85 39.35 41.85 43.15 47.55 49.30 53.45 55.00 59.25 61.75 65.00 70.75 72.30
60.80	30.35 30.40 30.45 31.70 35.55 36.10 37.70 37.90 39.35 41.85 43.15 47.60 49.35 53.50 55.05 59.25 59.40 61.85 65.00 70.80 72.35
60.85	30.40 30.45 30.50 31.75 35.55 36.15 37.75 37.95 39.35 41.90 43.20 47.60 49.40 53.50 55.10 59.30 59.45 61.75 61.90 65.05 70.80 72.40
60.90	30.40 30.45 30.50 31.75 35.55 36.20 37.80 38.00 39.40 41.90 43.20 47.65 49.45 53.55 55.15 59.30 59.50 61.95 65.05 70.85 72.45
60.95	30.45 30.50 30.55 31.75 35.60 36.20 37.85 38.05 39.40 41.95 43.20 47.65 49.50 53.55 55.20 59.35 62.05 65.10 70.85 72.50
61.00	30.45 30.50 30.55 31.80 35.60 36.20 37.90 38.10 39.40 41.95 43.25 47.70 49.55 53.60 55.25 59.35 61.95 62.10 65.10 70.90 72.55
61.05	30.50 30.55 30.60 31.80 35.60 36.25 37.95 38.15 39.45 42.00 43.25 47.70 49.60 53.60 55.30 59.40 62.00 62.15 65.15 70.90 72.60
61.10	30.50 30.55 30.60 31.80 35.65 36.30 38.00 38.20 39.45 42.00 43.25 47.70 49.65 53.65 55.35 59.40 59.75 62.25 65.15 70.95 72.65
61.15	30.55 30.60 30.65 31.85 35.65 36.30 38.05 38.25 39.45 42.05 43.30 47.75 49.70 53.65 55.40 59.45 59.80 62.30 65.20 70.95 72.70
61.20	30.55 30.60 30.65 31.85 35.65 36.35 38.10 38.30 39.50 42.05 43.30 47.80 49.75 53.70 55.45 59.45 59.85 62.20 62.35 65.20 71.00 72.75
61.25	30.60 30.65 30.70 31.85 35.70 36.35 38.15 38.35 39.50 42.10 43.30 47.80 49.80 53.70 55.50 59.50 62.45 65.25 71.00 72.80
61.30	30.60 30.65 30.70 31.90 35.70 36.35 38.20 38.40 39.50 42.10 43.35 47.85 49.85 53.75 55.55 59.50 62.50 65.25 71.05 72.85
61.35	30.65 30.70 30.75 31.90 35.70 36.40 38.25 38.45 39.55 42.15 43.35 47.85 49.90 53.75 55.60 59.55 62.15 62.40 62.55 65.30 71.05 72.90
61.40	30.65 30.70 30.75 31.90 35.75 36.45 38.30 38.50 39.55 42.15 43.35 47.90 49.95 53.80 55.65 59.55 60.10 62.45 62.65 65.30 71.10 72.95
61.45	30.70 30.75 30.80 31.95 35.75 36.45 38.35 38.55 39.55 42.20 43.40 47.90 50.00 53.80 55.70 59.60 60.15 62.70 65.35 71.10

TABLE II-1 (Sheet 16 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																		
61.501	73.90	30.75	30.80	31.95	35.75	36.45	38.40	38.60	39.60	42.20	43.40	47.95	50.05	53.85	55.75	59.60	60.20	62.35	62.75	65.35
61.851	71.15	73.05	30.80	30.85	31.95	35.80	36.50	38.45	38.65	39.60	42.25	43.40	47.95	50.10	53.85	55.80	59.65	62.40	62.65	62.85	65.40
61.601	71.15	73.10	30.80	30.85	32.00	35.80	36.55	38.50	38.70	39.60	42.25	43.45	47.95	50.15	53.90	55.85	59.65	62.90	65.40	71.20	73.15
61.651	30.80	30.85	30.90	32.00	35.80	36.55	38.55	38.75	39.65	42.30	43.45	48.00	50.20	53.90	55.90	59.70	59.75	62.95	65.45	71.20	73.20
61.701	30.80	30.85	30.90	32.00	35.85	36.60	38.60	38.80	39.65	42.30	43.45	48.05	50.25	53.95	55.95	59.70	59.80	60.45	62.60	62.85	63.05
61.751	65.45	71.25	73.25	30.85	30.90	30.95	32.05	35.85	36.60	38.65	38.85	39.65	42.35	43.50	48.05	50.30	53.95	56.00	59.75	60.50	62.65	62.90	63.10
61.801	65.50	71.25	73.30	30.85	30.90	30.95	32.05	35.85	36.60	38.70	38.90	39.70	42.35	43.50	48.10	50.35	54.00	56.05	59.75	59.95	60.55	62.70	63.15
61.851	65.50	71.30	73.35	30.90	30.95	31.00	32.05	35.90	36.65	38.75	38.95	39.70	42.40	43.50	48.10	50.40	54.00	56.10	59.80	60.00	63.25	65.55	71.30
61.901	73.40	30.90	30.95	31.00	32.10	35.90	36.70	38.80	39.00	39.70	42.40	43.55	48.15	50.45	54.05	56.15	59.80	60.05	63.10	63.30	65.55
61.951	71.35	73.45	30.95	31.00	31.05	32.10	35.90	36.70	38.85	39.05	39.75	42.45	43.55	48.15	50.50	54.05	56.20	59.85	62.90	63.35	65.60	71.35
62.001	73.50	30.95	31.00	31.05	32.10	35.95	36.70	38.90	39.10	39.75	42.45	43.55	48.20	50.55	54.10	56.25	59.85	60.20	60.80	62.95	63.45
62.051	65.60	71.40	73.55	31.00	31.05	31.10	32.15	35.95	36.75	38.95	39.15	39.75	42.50	43.60	48.20	50.60	54.10	56.30	59.90	60.25	60.85	63.30	63.50
62.101	65.65	71.40	73.60	31.00	31.05	31.10	32.15	35.95	36.80	39.00	39.20	39.80	42.50	43.60	48.25	50.65	54.15	56.35	59.90	60.30	60.90	63.35	63.55
62.151	65.65	71.45	73.65	31.05	31.10	31.15	32.15	36.00	36.80	39.05	39.25	39.80	42.55	43.60	48.25	50.70	54.15	56.40	59.95	63.15	63.65	65.70	71.45
62.201	73.70	31.05	31.10	31.15	32.20	36.00	36.85	39.10	39.30	39.80	42.55	43.65	48.30	50.75	54.20	56.45	59.95	60.45	63.20	63.70	65.70
62.251	71.50	73.75	31.10	31.15	31.20	32.20	36.00	36.85	39.15	39.35	39.85	42.60	43.65	48.30	50.80	54.20	56.50	60.00	60.50	63.25	63.55	63.75
62.301	65.75	71.50	73.80	31.10	31.15	31.20	32.20	36.05	36.85	39.20	39.40	39.85	42.60	43.65	48.35	50.85	54.25	56.55	60.00	60.55	61.15	63.85	65.75
62.351	71.55	73.85	31.15	31.20	31.25	32.25	36.05	36.90	39.25	39.45	39.85	42.65	43.70	48.35	50.90	54.25	56.60	60.05	61.20	63.90	65.80	71.55
62.401	73.90	31.15	31.20	31.25	32.25	36.05	36.95	39.30	39.50	39.90	42.65	43.70	48.40	50.95	54.30	56.65	60.05	60.70	61.25	63.45	63.95
62.451	65.80	71.60	73.95	31.20	31.25	31.30	32.25	36.10	36.95	39.35	39.55	39.90	42.70	43.70	48.40	51.00	54.30	56.70	60.10	60.75	63.50	64.05	65.85
62.501	71.60	74.00	31.20	31.25	31.30	32.30	36.10	36.95	39.40	39.60	39.90	42.70	43.75	48.45	51.05	54.35	56.75	60.10	60.80	64.10	65.85	71.65
62.551	74.05	31.25	31.30	31.35	32.30	36.10	37.00	39.45	39.65	39.95	42.75	43.75	48.45	51.10	54.35	56.80	60.15	64.15	65.90	71.65	74.10
62.601	31.25	31.30	31.35	32.30	36.15	37.05	39.50	39.70	39.95	42.75	43.75	48.50	51.15	54.40	56.85	60.15	60.95	61.50	63.70	64.25	65.90
62.651	71.70	74.15	31.30	31.35	31.40	32.35	36.15	37.05	39.55	39.75	39.95	42.80	43.80	48.50	51.20	54.40	56.90	60.20	61.00	61.55	63.75	64.30	65.95
62.701	71.70	74.20	31.30	31.35	31.40	32.35	36.15	37.10	39.60	39.80	40.00	42.80	43.80	48.55	51.25	54.45	56.95	60.20	61.05	61.60	63.80	64.35	65.95

TABLE II-1 (Sheet 17 of 23)

RCVR. FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																					
62.75:	45.95	71.75	74.25																			
	31.35	31.40	31.45	32.35	36.20	37.10	39.65	39.85	40.00	42.85	43.80	48.55	51.30	54.45	57.00	60.25	64.45	66.00	71.75	74.30		
62.80:	31.35	31.40	31.45	32.40	36.20	37.10	39.70	39.90	40.00	42.85	43.85	48.60	51.35	54.50	57.05	60.25	61.20	64.50	66.00	71.80		
62.85:	74.35																					
	31.40	31.45	31.50	32.40	36.20	37.15	39.75	39.95	40.05	42.90	43.85	48.60	51.40	54.50	57.10	60.30	61.25	64.00	64.85	66.05		
62.90:	71.80	74.40																				
	31.40	31.45	31.50	32.40	36.25	37.20	39.80	40.00	40.05	42.90	43.85	48.65	51.45	54.55	57.15	60.30	61.30	61.85	64.05	64.65		
62.95:	66.05	71.85	74.45																			
	31.45	31.50	31.55	32.45	36.25	37.20	39.85	40.05	42.95	43.90	48.65	51.50	54.55	57.20	60.35	61.90	64.70	66.10	71.85	74.50		
63.00:	31.45	31.50	31.55	32.45	36.25	37.20	39.90	40.10	42.95	43.90	48.70	51.55	54.60	57.25	60.35	61.45	61.95	64.75	66.10	71.90		
63.05:	74.55																					
	31.50	31.55	31.60	32.45	36.30	37.25	39.95	40.10	40.15	43.00	43.90	48.70	51.60	54.60	57.30	60.40	61.50	64.25	64.85	66.15		
63.10:	71.90	74.60																				
	31.50	31.55	31.60	32.50	36.30	37.30	40.00	40.10	40.20	43.00	43.95	48.75	51.65	54.65	57.35	60.40	61.55	64.30	64.90	66.15		
63.15:	71.95	74.65																				
	31.55	31.60	31.65	32.50	36.30	37.30	40.05	40.15	40.25	43.05	43.95	48.75	51.70	54.65	57.40	60.45	61.80	64.35	64.95	66.20		
63.20:	71.95	74.70																				
	31.55	31.60	31.65	32.50	36.35	37.35	40.10	40.15	40.30	43.05	43.95	48.80	51.75	54.70	57.45	60.45	61.70	61.85	62.20	65.05		
63.25:	66.20	72.00	74.75																			
	31.60	31.65	31.70	32.55	36.35	37.35	40.15	40.35	43.10	44.00	48.80	51.80	54.70	57.50	60.50	61.75	62.25	65.10	66.25	72.00		
63.30:	74.80																					
	31.60	31.65	31.70	32.55	36.35	37.35	40.20	40.40	43.10	44.00	48.85	51.85	54.75	57.55	60.50	61.80	62.30	64.55	65.15	66.25		
63.35:	72.05	74.85																				
	31.65	31.70	31.75	32.55	36.40	37.40	40.20	40.25	40.45	43.15	44.00	48.85	51.90	54.75	57.60	60.55	64.60	65.25	66.30	72.05		
63.40:	74.90																					
	31.65	31.70	31.75	32.60	36.40	37.45	40.20	40.30	40.50	43.15	44.05	48.90	51.95	54.80	57.65	60.55	61.95	62.10	65.30	66.30		
63.45:	72.10	74.95																				
	31.70	31.75	31.80	32.60	36.40	37.45	40.25	40.35	40.55	43.20	44.05	48.90	52.00	54.80	57.70	60.60	62.00	65.35	66.35	72.10		
63.50:	75.00																					
	31.70	31.75	31.80	32.60	36.45	37.45	40.25	40.40	40.60	43.20	44.05	48.95	52.05	54.85	57.75	60.60	62.05	62.55	64.80	65.45		
63.55:	66.35	72.15	75.05																			
	31.75	31.80	31.85	32.65	36.45	37.50	40.25	40.45	40.65	43.25	44.10	48.95	52.10	54.85	57.80	60.65	62.60	64.85	65.50	66.40		
63.60:	72.15	75.10																				
	31.75	31.80	31.85	32.65	36.45	37.55	40.30	40.50	40.70	43.25	44.10	49.00	52.15	54.90	57.85	60.65	62.20	62.35	62.65	65.55		
63.65:	66.40	72.20	75.15																			
	31.80	31.85	31.90	32.65	36.50	37.55	40.30	40.55	40.75	43.30	44.10	49.00	52.20	54.90	57.90	60.70	62.25	62.40	65.65	66.45		
63.70:	72.20	75.20																				
	31.80	31.85	31.90	32.70	36.50	37.60	40.30	40.60	40.80	43.30	44.15	49.05	52.25	54.95	57.95	60.70	62.30	65.70	66.45	72.25		
63.75:	75.25																					
	31.85	31.90	31.95	32.70	36.50	37.60	40.35	40.65	40.85	43.35	44.15	49.05	52.30	54.95	58.00	60.75	65.75	66.50	72.25	75.30		
63.80:	31.85	31.90	31.95	32.70	36.55	37.60	40.35	40.70	40.90	43.35	44.15	49.10	52.35	55.00	58.05	60.75	62.45	62.60	62.90	65.85		
63.85:	66.50	72.30	75.35																			
	31.90	31.95	32.00	32.75	36.55	37.65	40.35	40.75	40.95	43.40	44.20	49.10	52.40	55.00	58.10	60.80	62.50	62.65	62.95	65.90		
63.90:	66.55	72.30	75.40																			
	31.90	31.95	32.00	32.75	36.55	37.70	40.40	40.80	41.00	43.40	44.20	49.15	52.45	55.05	58.15	60.80	62.55	63.00	65.95	66.55		
63.95:	72.35	75.45																				
	31.95	32.00	32.05	32.75	36.60	37.70	40.40	40.85	41.05	43.45	44.20	49.15	52.50	55.05	58.20	60.85	66.05	66.60	72.35	75.50		
64.00:	31.95	32.00	32.05	32.80	36.60	37.70	40.40	40.90	41.10	43.45	44.25	49.20	52.55	55.10	58.25	60.85	62.70	66.10	66.60	72.40		

TABLE II-1 (Sheet 18 of 23)

RCVR. FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																	
64.05	75.55																	
	32.00	32.05	32.10	32.80	36.60	37.75	40.45	40.95	41.15	43.45	44.25	49.20	52.60	55.10	58.30	60.90	62.75	62.90	66.15	66.65
	72.40	75.60																		
64.10	32.00	32.05	32.10	32.80	36.65	37.80	40.45	41.00	41.20	43.50	44.25	49.25	52.65	55.15	58.35	60.90	62.80	62.95	63.25	66.25
	66.65	72.45	75.65																	
64.15	32.05	32.10	32.15	32.85	36.65	37.80	40.45	41.05	41.25	43.55	44.30	49.25	52.70	55.15	58.40	60.95	63.30	66.30	66.70	72.45
	75.70																			
64.20	32.05	32.10	32.15	32.85	36.65	37.85	40.50	41.10	41.30	43.55	44.30	49.30	52.75	55.20	58.45	60.95	62.95	63.35	66.35	66.70
	72.50	75.75																		
64.25	32.05	32.10	32.15	32.85	36.70	37.85	40.50	41.15	41.35	43.55	44.30	49.30	52.80	55.20	58.50	61.00	63.00	63.15	66.45	66.75
	72.50	75.80																		
64.30	32.10	32.15	32.20	32.90	36.70	37.85	40.50	41.20	41.40	43.60	44.35	49.30	52.85	55.25	58.55	61.00	63.05	63.20	66.50	66.75
	72.55	75.85																		
64.35	30.00	32.15	32.20	32.25	32.90	36.70	37.90	40.55	41.25	41.45	43.65	44.35	49.35	52.90	55.25	58.60	61.05	66.55	66.80	72.55
	75.90																			
64.40	30.05	32.15	32.20	32.25	32.90	36.75	37.95	40.55	41.30	41.50	43.65	44.35	49.40	52.95	55.30	58.65	61.05	63.20	63.60	66.65
	66.80	72.60	75.95																	
64.45	30.10	32.20	32.25	32.30	32.95	36.75	37.95	40.55	41.35	41.55	43.70	44.40	49.40	55.30	58.70	61.10	63.25	66.70	66.85	72.60
64.50	30.15	32.20	32.25	32.30	32.95	36.75	37.95	40.60	41.40	41.60	43.70	44.40	49.40	55.35	58.75	61.10	63.30	63.45	66.75	66.85
	72.65																			
64.55	30.20	32.25	32.30	32.35	32.95	36.80	38.00	40.60	41.45	41.65	43.70	44.40	49.45	53.00	55.35	58.80	61.15	63.50	66.85	66.90
	72.65																			
64.60	30.25	32.25	32.30	32.35	33.00	36.80	38.05	40.60	41.50	41.70	43.75	44.45	49.50	53.05	55.40	58.85	61.15	63.45	66.90	72.70
64.65	30.30	32.30	32.35	32.40	33.00	36.80	38.05	40.65	41.55	41.75	43.80	44.45	49.50	53.10	55.40	58.90	61.20	63.50	66.95	72.70
64.70	30.35	32.30	32.35	32.40	33.00	36.85	38.10	40.65	41.60	41.80	43.80	44.45	49.55	53.15	55.45	58.95	61.20	63.55	63.70	66.95
	67.05	72.75																		
64.75	30.40	32.30	32.35	32.40	33.05	36.85	38.10	40.65	41.65	41.85	43.80	44.50	49.55	53.20	55.45	59.00	61.25	63.75	67.00	67.10
	72.75																			
64.80	30.45	32.35	32.40	32.45	33.05	36.85	38.10	40.70	41.70	41.90	43.85	44.50	49.55	53.25	55.50	59.05	61.25	63.70	67.00	67.15
	72.80																			
64.85	30.50	32.40	32.45	32.50	33.05	36.90	38.15	40.70	41.75	41.95	43.90	44.50	49.60	53.30	55.50	59.10	61.30	63.75	67.05	67.25
	72.80																			
64.90	30.55	32.40	32.45	32.50	33.10	36.90	38.20	40.70	41.80	42.00	43.90	44.55	49.65	53.35	55.55	59.15	61.30	63.80	67.05	67.30
	72.85																			
64.95	30.60	32.45	32.50	32.55	33.10	36.90	38.20	40.75	41.85	42.05	43.95	44.55	49.65	53.40	55.55	59.20	61.35	64.00	67.10	67.35
	72.85																			
65.00	30.65	32.45	32.50	32.55	33.10	36.95	38.20	40.75	41.90	42.10	43.95	44.55	49.65	53.45	55.60	59.25	61.35	63.95	64.05	67.10
	67.95	72.90																		
65.05	30.70	32.50	32.55	32.60	33.15	36.95	38.25	40.75	41.95	42.15	43.95	44.60	49.70	53.50	55.60	59.30	61.40	64.00	67.15	67.50
	72.90																			
65.10	30.75	32.50	32.55	32.60	33.15	36.95	38.30	40.80	42.00	42.20	44.00	44.60	49.75	53.55	55.65	59.35	61.40	64.05	67.15	67.55
	72.95																			
65.15	30.80	32.55	32.60	32.65	33.15	37.00	38.30	40.80	42.05	42.25	44.05	44.60	49.75	53.60	55.65	59.40	61.45	64.25	67.20	67.65
	72.95																			
65.20	30.85	32.55	32.60	32.65	33.20	37.00	38.35	40.80	42.10	42.30	44.05	44.65	49.80	53.65	55.70	59.45	61.45	64.20	64.30	67.20
	67.70	73.00																		
65.25	30.90	32.55	32.60	32.65	33.20	37.00	38.35	40.85	42.15	42.35	44.05	44.65	49.80	53.70	55.70	59.50	61.50	64.25	67.25	67.75

TABLE II-1 (Sheet 19 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																	
65.301	73.00 30.95	32.40	32.65	32.70	33.20	37.05	38.35	40.85	42.20	42.40	44.10	44.65	49.80	53.75	55.75	59.55	61.50	64.30	67.25	67.85
65.351	73.05 31.00	32.45	32.70	32.75	33.25	37.05	38.40	40.85	42.25	42.45	44.15	44.70	49.85	53.80	55.75	59.60	61.55	67.30	67.90	73.05
65.401	31.05	32.45	32.70	32.75	33.25	37.05	38.45	40.90	42.30	42.50	44.15	44.70	49.90	53.85	55.80	59.65	61.55	64.45	64.55	67.30
65.451	67.95 73.10 31.10	32.70	32.75	32.80	33.25	37.10	38.45	40.90	42.35	42.55	44.20	44.70	49.90	53.90	55.80	59.70	61.60	64.50	64.60	67.35
65.501	68.05 73.10 31.15	32.70	32.75	32.80	33.30	37.10	38.45	40.90	42.40	42.60	44.20	44.75	49.90	53.95	55.85	59.75	61.60	64.55	67.35	68.10
65.551	73.15 31.20	32.75	32.80	32.85	33.30	37.10	38.50	40.95	42.45	42.65	44.20	44.75	49.95	54.00	55.85	59.80	61.65	67.40	68.15	73.15
65.601	31.25	32.75	32.80	32.85	33.30	37.15	38.55	40.95	42.50	42.70	44.25	44.75	50.00	54.05	55.90	59.85	61.65	64.70	64.80	67.40
65.651	68.25 73.20 31.30	32.80	32.85	32.90	33.35	37.15	38.55	40.95	42.55	42.75	44.30	44.80	50.00	54.10	55.90	59.90	61.70	64.75	67.45	68.30
65.701	73.20 31.35	32.80	32.85	32.90	33.35	37.15	38.60	41.00	42.60	42.80	44.30	44.80	50.05	54.15	55.95	59.95	61.70	64.80	67.45	68.35
65.751	73.25 31.40	32.80	32.85	32.90	33.35	37.20	38.60	41.00	42.65	42.85	44.30	44.80	50.05	54.20	55.95	60.00	61.75	67.50	68.45	73.25
65.801	31.45	32.85	32.90	32.95	33.40	37.20	38.60	41.00	42.70	42.90	44.35	44.85	50.05	54.25	56.00	60.05	61.75	64.95	67.50	68.50
65.851	73.30 31.50	32.90	32.95	33.00	33.40	37.20	38.65	41.05	42.75	42.95	44.40	44.85	50.10	54.30	56.00	60.10	61.80	65.00	67.55	68.55
65.901	73.30 31.55	32.90	32.95	33.00	33.40	37.25	38.70	41.05	42.80	43.00	44.40	44.85	50.15	54.35	56.05	60.15	61.80	65.05	67.55	68.65
65.951	73.35 31.60	32.95	33.00	33.05	33.45	37.25	38.70	41.05	42.85	43.05	44.45	44.90	50.15	54.40	56.05	60.20	61.85	67.60	68.70	73.35
66.001	31.65	32.95	33.00	33.05	33.45	37.25	38.70	41.10	42.90	43.10	44.45	44.90	50.15	54.45	56.10	60.25	61.85	65.20	67.60	68.75
66.051	73.40 31.70	33.00	33.05	33.10	33.45	37.30	38.75	41.10	42.95	43.15	44.45	44.90	50.20	54.50	56.10	60.30	61.90	67.65	68.85	73.40
66.101	31.75	33.00	33.05	33.10	33.50	37.30	38.80	41.10	43.00	43.20	44.50	44.95	50.25	54.55	56.15	60.35	61.90	67.65	68.90	73.45
66.151	31.80	33.05	33.10	33.15	33.50	37.30	38.80	41.15	43.05	43.25	44.55	44.95	50.25	54.60	56.15	60.40	61.95	67.70	68.95	73.45
66.201	31.85	33.05	33.10	33.15	33.50	37.35	38.85	41.15	43.10	43.30	44.55	44.95	50.30	54.65	56.20	60.45	61.95	67.70	69.05	73.50
66.251	31.90	33.05	33.10	33.15	33.55	37.35	38.85	41.15	43.15	43.35	44.55	45.00	50.30	54.70	56.20	60.50	62.00	67.75	69.10	73.50
66.301	31.95	33.10	33.15	33.20	33.55	37.35	38.85	41.20	43.20	43.40	44.60	45.00	50.30	54.75	56.25	60.55	62.00	67.75	69.15	73.55
66.351	32.00	33.15	33.20	33.25	33.55	37.40	38.90	41.20	43.25	43.45	44.65	45.00	50.35	54.80	56.25	60.60	62.05	67.80	69.25	73.55
66.401	32.05	33.15	33.20	33.25	33.60	37.40	38.95	41.20	43.30	43.50	44.65	45.05	50.40	54.85	56.30	60.65	62.05	67.80	69.30	73.60
66.451	32.10	33.20	33.25	33.30	33.60	37.40	38.95	41.25	43.35	43.55	44.70	45.05	50.40	54.90	56.30	60.70	62.10	67.85	69.35	73.60
66.501	32.15	33.20	33.25	33.30	33.60	37.45	38.95	41.25	43.40	43.60	44.70	45.05	50.40	54.95	56.35	60.75	62.10	67.85	69.45	73.65
66.551	32.20	33.25	33.30	33.35	33.65	37.45	39.00	41.25	43.45	43.65	44.70	45.10	50.45	55.00	56.35	60.80	62.15	67.90	69.50	73.65
66.601	32.25	33.25	33.30	33.35	33.65	37.45	39.05	41.30	43.50	43.70	44.75	45.10	50.50	55.05	56.40	60.85	62.15	67.90	69.55	73.70
66.651	32.30	33.30	33.35	33.40	33.65	37.50	39.05	41.30	43.55	43.75	44.80	45.10	50.50	55.10	56.40	60.90	62.20	67.95	69.65	73.70
66.701	32.35	33.30	33.35	33.40	33.70	37.50	39.10	41.30	43.60	43.80	44.80	45.15	50.55	55.15	56.45	60.95	62.20	67.50	67.95	73.75
66.751	32.40	33.30	33.35	33.40	33.70	37.50	39.10	41.35	43.65	43.85	44.80	45.15	50.55	55.20	56.45	61.00	62.25	68.00	73.75	
66.801	32.45	33.35	33.40	33.45	33.70	37.55	39.10	41.35	43.70	43.90	44.85	45.15	50.55	55.25	56.50	61.05	62.25	68.00	73.80	
66.851	32.50	33.40	33.45	33.50	33.75	37.55	39.15	41.35	43.75	43.95	44.90	45.20	50.60	55.30	56.50	61.10	62.30	67.70	68.05	73.80
66.901	32.55	33.40	33.45	33.50	33.75	37.55	39.20	41.40	43.80	44.00	44.90	45.20	50.65	55.35	56.55	61.15	62.30	67.75	68.05	73.85
66.951	32.60	33.45	33.50	33.55	33.75	37.60	39.20	41.40	43.85	44.05	44.95	45.20	50.65	55.40	56.55	61.20	62.35	68.10	73.85	
67.001	32.65	33.45	33.50	33.55	33.80	37.60	39.20	41.40	43.90	44.10	44.95	45.25	50.65	55.45	56.60	61.25	62.35	68.10	73.90	
67.051	32.70	33.50	33.55	33.60	33.80	37.60	39.25	41.45	43.95	44.15	44.95	45.25	50.70	55.50	56.60	61.30	62.40	67.95	68.15	73.90
67.101	32.75	33.50	33.55	33.60	33.80	37.65	39.30	41.45	44.00	44.20	45.00	45.25	50.75	55.55	56.65	61.35	62.40	68.00	68.15	73.95

TABLE II-1 (Sheet 20 of 23)

RCVR. FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																			
67.151	33.00	33.55	33.60	33.65	33.85	37.65	39.30	41.45	44.05	44.25	45.05	45.30	50.75	55.60	56.65	61.40	62.45	68.20	73.95	
67.201	32.85	33.55	33.60	33.65	33.85	37.65	39.35	41.60	44.10	44.30	45.05	45.30	50.80	55.65	56.70	61.45	62.45	68.20	74.00	
67.251	32.90	33.55	33.60	33.65	33.85	37.70	39.35	41.50	44.15	44.35	45.05	45.30	50.80	55.70	56.70	61.50	62.50	68.20	68.25	74.00
67.301	32.95	33.60	33.65	33.70	33.90	37.70	39.35	41.50	44.20	44.40	45.10	45.35	50.80	55.75	56.75	61.55	62.50	68.25	74.05	
67.351	33.00	33.65	33.70	33.75	33.90	37.70	39.40	41.55	44.25	44.45	45.15	45.35	50.85	55.80	56.75	61.60	62.55	68.30	74.05	
67.401	33.05	33.65	33.70	33.75	33.90	37.75	39.45	41.55	44.30	44.50	45.15	45.35	50.90	55.85	56.80	61.65	62.55	68.30	74.10	
67.451	33.10	33.70	33.75	33.80	33.95	37.75	39.45	41.55	44.35	44.55	45.20	45.40	50.90	55.90	56.80	61.70	62.60	68.35	68.45	74.10
67.501	33.15	33.70	33.75	33.80	33.95	37.75	39.45	41.60	44.40	44.60	45.20	45.40	50.90	55.95	56.85	61.75	62.60	68.30	68.35	68.50
	74.15																			
67.551	33.20	33.75	33.80	33.85	33.95	37.80	39.50	41.60	44.45	44.65	45.20	45.40	50.95	56.00	56.85	61.80	62.65	68.40	74.15	
67.601	33.25	33.75	33.80	33.85	34.00	37.80	39.55	41.60	44.50	44.70	45.25	45.45	51.00	56.05	56.90	61.85	62.65	74.20		
67.651	33.30	33.80	33.85	33.90	34.00	37.80	39.55	41.65	44.55	44.75	45.30	45.45	51.00	56.10	56.90	61.90	62.70	68.70	74.20	
67.701	33.35	33.80	33.85	33.90	34.00	37.85	39.60	41.65	44.60	44.80	45.30	45.45	51.05	56.15	56.95	61.95	62.70	68.55	68.75	74.25
67.751	33.40	33.50	33.85	33.90	34.05	37.85	39.60	41.65	44.65	44.85	45.30	45.50	51.05	56.20	56.95	62.00	62.75	68.60	74.25	
67.801	33.45	33.85	33.90	33.95	34.05	37.85	39.60	41.70	44.70	44.90	45.35	45.50	51.05	56.25	57.00	62.05	62.75	74.30		
67.851	33.50	33.90	33.95	34.00	34.05	37.90	39.65	41.70	44.75	44.95	45.40	45.50	51.10	56.30	57.00	62.10	62.80	68.95	74.30	
67.901	33.55	33.90	33.95	34.00	34.10	37.90	39.70	41.70	44.80	45.00	45.40	45.55	51.15	56.35	57.05	62.15	62.80	69.00	74.35	
67.951	33.60	33.95	34.00	34.05	34.10	37.90	39.70	41.75	44.85	45.05	45.45	45.55	51.15	56.40	57.05	62.20	62.85	68.95	74.35	
68.001	33.65	33.95	34.00	34.05	34.10	37.95	39.70	41.75	44.90	45.10	45.45	45.55	51.15	56.45	57.10	62.25	62.85	68.90	74.40	
68.051	33.70	34.00	34.05	34.10	34.15	37.95	39.75	41.75	44.95	45.15	45.45	45.60	51.20	56.50	57.10	62.30	62.90	66.65	69.20	74.40
68.101	33.75	34.00	34.05	34.10	34.15	37.95	39.80	41.80	45.00	45.20	45.50	45.60	51.25	56.55	57.15	62.35	62.90	69.25	74.45	
68.151	33.80	34.05	34.10	34.15	34.15	38.00	39.80	41.80	45.05	45.25	45.55	45.60	51.25	56.60	57.15	62.40	62.95	74.45		
68.201	33.85	34.05	34.10	34.15	34.20	38.00	39.85	41.80	45.10	45.30	45.55	45.65	51.30	56.65	57.20	62.45	62.95	66.85	69.15	74.50
68.251	33.90	34.05	34.10	34.15	34.20	38.00	39.85	41.85	45.15	45.35	45.55	45.65	51.30	56.70	57.20	62.50	63.00	66.90	69.20	69.45
	74.50																			
68.301	33.95	34.10	34.15	34.20	34.20	38.05	39.85	41.85	45.20	45.40	45.60	45.65	51.30	56.75	57.25	62.55	63.00	66.95	69.50	74.55
68.351	34.00	34.15	34.20	34.25	38.05	39.90	41.85	45.25	45.45	45.65	45.70	51.35	56.80	57.25	62.60	63.05	74.55			
68.401	34.05	34.15	34.20	34.25	38.05	39.95	41.90	45.30	45.50	45.65	45.70	51.40	56.85	57.30	62.65	63.05	74.60			
68.451	34.10	34.20	34.25	34.30	38.10	39.95	41.90	45.35	45.55	45.70	51.40	56.90	57.30	62.70	63.10	67.15	69.45	69.70	74.60	
68.501	34.15	34.20	34.25	34.30	34.30	38.10	39.95	41.90	45.40	45.60	45.70	45.75	51.40	56.95	57.35	62.75	63.10	67.20	69.50	69.75
	74.65																			
68.551	34.20	34.25	34.30	34.35	38.10	40.00	41.95	45.45	45.65	45.70	45.75	51.45	57.00	57.35	62.80	63.15	67.25	74.65		
68.601	34.25	34.25	34.30	34.35	38.15	40.05	41.95	45.50	45.70	45.75	51.50	57.05	57.40	62.85	63.15	74.70				
68.651	34.30	34.35	34.40	38.15	40.05	41.95	45.55	45.75	45.80	51.50	57.10	57.40	62.90	63.20	69.95	74.70				
68.701	34.30	34.35	34.40	38.15	40.10	42.00	45.60	45.80	51.55	57.15	57.45	62.95	63.20	65.25-75.95						
68.751	34.30	34.35	34.40	34.40	38.20	40.10	42.00	45.65	45.80	45.85	51.55	57.20	57.45	63.00	63.25	67.50	69.80	74.75		
68.801	34.35	34.40	34.45	34.45	38.20	40.15	42.00	45.70	45.85	45.90	51.55	57.25	57.50	63.05	63.25	67.55	74.80			
68.851	34.40	34.40	34.45	34.50	38.20	40.15	42.05	45.75	45.85	45.90	45.95	51.60	57.30	57.50	63.10	63.30	70.20	74.80		
68.901	34.40	34.40	34.45	34.50	34.55	38.25	40.20	42.05	45.80	45.85	45.90	46.00	51.65	57.35	57.55	63.15	63.30	74.85		
68.951	34.45	34.50	34.55	34.60	38.25	40.20	42.05	45.85	45.90	46.05	51.65	57.40	57.55	63.20	63.35	67.75	70.05	74.85		
69.001	34.45	34.50	34.55	34.65	38.25	40.20	42.10	45.90	45.95	46.10	51.65	57.45	57.60	63.25	63.35	67.80	70.10	74.90		
69.051	34.45	34.50	34.55	34.60	34.70	38.30	40.25	42.10	45.90	45.95	46.15	51.70	57.50	57.60	63.30	63.40	67.85	74.90		
69.101	34.50	34.50	34.55	34.60	34.75	38.30	40.30	42.10	45.95	46.00	46.20	51.75	57.55	57.65	63.35	63.40	74.95			
69.151	34.50	34.55	34.60	34.65	34.80	38.30	40.30	42.15	45.95	46.05	46.25	51.75	57.60	57.65	63.40	63.45	74.95			
69.201	34.50	34.55	34.60	34.65	34.85	38.35	40.35	42.15	45.95	46.05	46.10	46.30	51.80	57.65	57.70	63.45	68.05	70.35	75.00	
69.251	34.55	34.60	34.65	34.90	38.35	40.35	42.15	46.00	46.05	46.15	46.35	51.80	57.70	63.50	68.10	70.40	75.00			
69.301	34.55	34.60	34.65	34.70	34.95	38.35	40.40	42.20	46.00	46.10	46.20	46.40	51.80	57.75	63.50	63.55	65.25-75.95			
69.351	34.55	34.65	34.70	34.75	35.00	38.40	40.40	42.20	46.00	46.15	46.25	46.45	51.85	57.75	57.80	63.55	63.60	75.05		

TABLE II-1 (Sheet 21 of 23)

RCVR FREQ (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																	
69.40	34.60	34.65	34.70	34.75	35.05	38.40	40.45	42.20	46.05	46.15	46.30	46.50	51.90	57.80	57.85	63.55	63.65	75.10		
69.45	34.60	34.70	34.75	34.80	35.10	38.40	40.45	42.25	46.05	46.20	46.35	46.55	51.90	57.80	57.90	63.60	63.70	68.35	70.65	75.10
69.50	34.60	34.70	34.75	34.80	35.15	38.45	40.45	42.25	46.05	46.20	46.40	46.60	51.90	57.85	57.95	63.60	63.75	68.40	70.70	75.15
69.55	34.65	34.75	34.80	34.85	35.20	38.45	40.50	42.25	46.10	46.20	46.45	46.65	51.95	57.85	58.00	63.65	63.80	68.45	75.15	
69.60	34.65	34.75	34.80	34.85	35.25	38.45	40.55	42.30	46.10	46.25	46.50	46.70	52.00	57.90	58.05	63.65	63.85	75.20		
69.65	34.65	34.80	34.85	34.90	35.30	38.50	40.55	42.30	46.10	46.30	46.55	46.75	52.00	57.90	58.10	63.70	63.90	75.20		
69.70	34.70	34.80	34.85	34.90	35.35	38.50	40.60	42.30	46.15	46.30	46.60	46.80	52.05	57.95	58.15	63.70	63.95	68.65	70.95	75.25
69.75	34.70	34.80	34.85	34.90	35.40	38.50	40.60	42.35	46.15	46.30	46.65	46.85	52.05	57.95	58.20	63.75	64.00	68.70	71.00	75.25
69.80	34.70	34.85	34.90	34.95	35.45	38.55	40.65	42.35	46.15	46.35	46.70	46.90	52.05	58.00	58.25	63.75	64.05	68.75	75.30	
69.85	34.75	34.90	34.95	35.00	35.50	38.55	40.65	42.35	46.20	46.40	46.75	46.95	52.10	58.00	58.30	63.80	64.10	75.30		
69.90	34.75	34.90	34.95	35.00	35.55	38.55	40.70	42.40	46.20	46.40	46.80	47.00	52.15	58.05	58.35	63.80	64.15	75.35		
69.95	34.75	34.95	35.00	35.05	35.60	38.60	40.70	42.40	46.20	46.45	46.85	47.05	52.15	58.05	58.40	63.85	64.20	68.95	71.25	75.35
70.00	34.80	34.95	35.00	35.05	35.65	38.60	40.70	42.40	46.25	46.45	46.90	47.10	52.15	58.10	58.45	63.85	64.25	69.00	71.30	75.40
70.05	34.80	35.00	35.05	35.10	35.70	38.60	40.75	42.45	46.25	46.45	46.95	47.15	52.20	58.10	58.50	63.90	64.30	69.05	75.40	
70.10	34.80	35.00	35.05	35.10	35.75	38.65	40.80	42.45	46.25	46.50	47.00	47.20	52.25	58.15	58.55	63.90	64.35	75.45		
70.15	34.85	35.05	35.10	35.15	35.80	38.65	40.80	42.45	46.30	46.55	47.05	47.25	52.25	58.15	58.60	63.95	64.40	75.45		
70.20	34.85	35.05	35.10	35.15	35.85	38.65	40.85	42.50	46.30	46.55	47.10	47.30	52.30	58.20	58.65	63.95	64.45	69.25	71.55	75.50
70.25	34.85	35.05	35.10	35.15	35.90	38.70	40.85	42.50	46.30	46.55	47.15	47.35	52.30	58.20	58.70	64.00	64.50	69.30	71.60	75.50
70.30	34.90	35.10	35.15	35.20	35.95	38.70	40.90	42.50	46.35	46.60	47.20	47.40	52.30	58.25	58.75	64.00	64.55	69.35	75.55	
70.35	34.90	35.15	35.20	35.25	36.00	38.70	40.90	42.55	46.35	46.65	47.25	47.45	52.35	58.25	58.80	64.05	64.60	75.55		
70.40	34.90	35.15	35.20	35.25	36.05	38.75	40.95	42.55	46.35	46.65	47.30	47.50	52.40	58.30	58.85	64.05	64.65	75.60		
70.45	34.95	35.20	35.25	35.30	36.10	38.75	40.95	42.55	46.40	46.70	47.35	47.55	52.40	58.30	58.90	64.10	64.70	69.55	75.60	
70.50	34.95	35.20	35.25	35.30	36.15	38.75	40.95	42.60	46.40	46.70	47.40	47.60	52.40	58.35	58.95	64.10	64.75	69.60	75.65	
70.55	34.95	35.25	35.30	35.35	36.20	38.80	41.00	42.60	46.40	46.70	47.45	47.65	52.45	58.35	59.00	64.10	64.80	69.10	69.65	75.65
70.60	35.00	35.25	35.30	35.35	36.25	38.80	41.05	42.60	46.45	46.75	47.50	47.70	52.50	58.40	59.05	64.15	64.85	69.15	75.70	
70.65	35.00	35.30	35.35	35.40	36.30	38.80	41.05	42.65	46.45	46.80	47.55	47.75	52.50	58.40	59.10	64.20	64.90	69.20	75.70	
70.70	35.00	35.30	35.35	35.40	36.35	38.85	41.10	42.65	46.45	46.80	47.60	47.80	52.55	58.45	59.15	64.20	64.95	69.25	69.85	75.75
70.75	35.05	35.30	35.35	35.40	36.40	38.85	41.10	42.65	46.50	46.80	47.65	47.85	52.55	58.45	59.20	64.25	65.00	69.90	75.75	
70.80	35.05	35.35	35.40	35.45	36.45	38.85	41.15	42.70	46.50	46.85	47.70	47.90	52.55	58.50	59.25	64.25	65.05	69.95	75.80	
70.85	35.05	35.40	35.45	35.50	36.50	38.90	41.15	42.70	46.50	46.90	47.75	47.95	52.60	58.50	59.30	64.30	65.10	75.80		
70.90	35.10	35.40	35.45	35.50	36.55	38.90	41.20	42.70	46.55	46.90	47.80	48.00	52.65	58.55	59.35	64.30	65.15	69.50	70.05	75.85
70.95	35.10	35.45	35.50	35.55	36.60	38.90	41.20	42.75	46.55	46.95	47.85	48.05	52.65	58.55	59.40	64.35	65.20	69.55	70.10	70.15
71.00	75.85 35.10	35.45	35.50	35.55	36.65	38.95	41.20	42.75	46.55	46.95	47.90	48.10	52.65	58.60	59.45	64.35	65.25	69.60	70.10	70.20
71.05	75.90 35.15	35.50	35.55	35.60	36.70	38.95	41.25	42.75	46.60	46.95	47.95	48.15	52.70	58.60	59.50	64.35	65.30	69.65	70.15	75.90
71.10	35.15	35.50	35.55	35.60	36.75	38.95	41.30	42.80	46.60	47.00	48.00	48.20	52.75	58.65	59.55	64.40	65.35	70.15	75.95	
71.15	35.15	35.55	35.60	35.65	36.80	39.00	41.30	42.80	46.60	47.05	48.05	48.25	52.75	58.65	59.60	64.45	65.40	70.20	75.95	
71.20	35.20	35.55	35.60	35.65	36.85	39.00	41.35	42.80	46.65	47.05	48.10	48.30	52.80	58.70	59.65	64.45	65.45	70.20		
71.25	35.20	35.55	35.60	35.65	36.90	39.00	41.35	42.85	46.65	47.05	48.15	48.35	52.80	58.70	59.70	64.50	65.50	69.90	70.25	
71.30	35.20	35.60	35.65	35.70	36.95	39.05	41.40	42.85	46.65	47.10	48.20	48.40	52.80	58.75	59.75	64.50	65.55	69.95	70.25	
71.35	35.25	35.65	35.70	35.75	37.00	39.05	41.40	42.85	46.70	47.15	48.25	48.45	52.85	53.00	58.75	59.80	64.55	65.60	70.00	70.30
71.40	35.25	35.65	35.70	35.75	37.05	39.05	41.45	42.90	46.70	47.15	48.30	48.50	52.90	53.00	58.80	59.85	64.55	65.65	70.05	70.30
71.45	35.25	35.70	35.75	35.80	37.10	39.10	41.45	42.90	46.70	47.20	48.35	48.55	52.90	53.05	58.80	59.90	64.60	65.70	70.35	
71.50	35.30	35.70	35.75	35.80	37.15	39.10	41.45	42.90	46.75	47.20	48.40	48.60	52.90	53.05	58.85	59.95	64.60	65.75	70.35	
71.55	35.30	35.75	35.80	35.85	37.20	39.10	41.50	42.95	46.75	47.20	48.45	48.65	52.95	53.10	58.85	60.00	64.60	65.80	70.40	
71.60	35.30	35.75	35.80	35.85	37.25	39.15	41.55	42.95	46.75	47.25	48.50	48.70	53.10	58.90	60.05	64.65	65.85	70.30	70.40	
71.65	35.35	35.80	35.85	35.90	37.30	39.15	41.55	42.95	46.80	47.30	48.55	48.75	53.15	58.90	60.10	64.70	65.90	70.35	70.45	

TABLE II-1 (Sheet 22 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																		
71.70	35.35	35.80	35.85	35.90	37.35	39.15	41.60	43.00	46.80	47.30	48.40	48.80	53.15	58.95	60.15	64.70	65.95	70.40	70.45
71.75	35.35	35.80	35.85	35.90	37.40	39.20	41.60	43.00	46.80	47.30	48.65	48.85	53.20	58.95	60.20	64.75	66.00	70.45	70.50
71.80	35.40	35.85	35.90	35.95	37.45	39.20	41.65	43.00	46.85	47.35	48.70	48.90	53.20	59.00	60.25	64.75	66.05	70.50	
71.85	35.40	35.90	35.95	36.00	37.50	39.20	41.65	43.05	46.85	47.40	48.75	48.95	53.25	59.00	60.30	64.80	66.10	70.55	
71.90	35.40	35.90	35.95	36.00	37.55	39.25	41.70	43.05	46.85	47.40	48.80	49.00	53.25	59.05	60.35	64.80	66.15	70.55	
71.95	35.45	35.95	36.00	36.05	37.60	39.25	41.70	43.05	46.90	47.45	48.85	49.05	53.30	59.05	60.40	64.85	66.20	70.60	70.70
72.001	35.45	35.95	36.00	36.05	37.65	39.25	41.70	43.10	46.90	47.45	48.90	49.10	53.30	59.10	60.45	64.85	66.25	70.60	70.75
72.051	35.45	36.00	36.05	36.10	37.70	39.30	41.75	43.10	46.90	47.45	48.95	49.15	53.35	59.10	60.50	64.85	66.30	70.65	70.80
72.101	35.50	36.00	36.05	36.10	37.75	39.30	41.80	43.10	46.95	47.50	49.00	49.20	53.35	59.15	60.55	64.90	66.35	70.65	70.85
72.151	35.50	36.05	36.10	36.15	37.80	39.30	41.80	43.15	46.95	47.55	49.05	49.25	53.40	59.15	60.60	64.95	66.40	70.70	
72.201	35.50	36.05	36.10	36.15	37.85	39.35	41.85	43.15	46.95	47.55	49.10	49.30	53.40	59.20	60.65	64.95	66.45	70.70	
72.251	35.55	36.05	36.10	36.15	37.90	39.35	41.85	43.15	47.00	47.55	49.15	49.35	53.45	59.20	60.70	65.00	66.50	70.75	
72.301	35.55	36.10	36.15	36.20	37.95	39.35	41.90	43.20	47.00	47.60	49.20	49.40	53.45	59.25	60.75	65.00	66.55	70.75	71.10
72.35;	35.55	36.15	36.20	36.25	38.00	39.40	41.90	43.20	47.00	47.65	49.25	49.45	53.50	59.25	60.80	65.05	66.60	70.80	71.15
72.401	35.60	36.15	36.20	36.25	38.05	39.40	41.95	43.20	47.05	47.65	49.30	49.50	53.50	59.30	60.85	65.05	66.65	70.80	71.20
72.451	35.60	36.20	36.25	36.30	38.10	39.40	41.95	43.25	47.05	47.70	49.35	49.55	53.55	59.30	60.90	65.10	66.70	70.85	71.25 73.25
72.501	35.60	36.20	36.25	36.30	38.15	39.45	41.95	43.25	47.05	47.70	49.40	49.60	53.55	59.35	60.95	65.10	66.75	70.85	73.30
72.551	35.65	36.25	36.30	36.35	38.20	39.45	42.00	43.25	47.10	47.70	49.45	49.65	53.60	59.35	61.00	65.10	66.80	70.90	
72.601	35.65	36.25	36.30	36.35	38.25	39.45	42.05	43.30	47.10	47.75	49.50	49.70	53.60	59.40	61.05	65.15	66.85	70.90	73.45
72.651	35.65	36.30	36.35	36.40	38.30	39.50	42.05	43.30	47.10	47.80	49.55	49.75	53.65	59.40	61.10	65.20	66.90	70.95	71.50 73.50
72.701	35.70	36.30	36.35	36.40	38.35	39.50	42.10	43.30	47.15	47.80	49.60	49.80	53.65	59.45	61.15	65.20	66.95	70.95	71.55 73.55
72.751	35.70	36.30	36.35	36.40	38.40	39.50	42.10	43.35	47.15	47.80	49.65	49.85	53.70	59.45	61.20	65.25	67.00	71.00	71.60
72.801	35.70	36.35	36.40	36.45	38.45	39.55	42.15	43.35	47.15	47.85	49.70	49.90	53.70	59.50	61.25	65.25	67.05	71.00	71.65 73.70
72.851	35.75	36.40	36.45	36.50	38.50	39.55	42.15	43.35	47.20	47.90	49.75	49.95	53.75	59.50	61.30	65.30	67.10	71.05	73.65 73.75
72.901	35.75	36.40	36.45	36.50	38.55	39.55	42.20	43.40	47.20	47.90	49.80	50.00	53.75	59.55	61.35	65.30	67.15	71.05	73.80
72.951	35.75	36.45	36.50	36.55	38.60	39.60	42.20	43.40	47.20	47.95	49.85	50.05	53.80	59.55	61.40	65.35	67.20	71.10	
73.001	35.80	36.45	36.50	36.55	38.65	39.60	42.20	43.40	47.25	47.95	49.90	50.10	53.80	59.60	61.45	65.35	67.25	71.10	71.90 73.95
73.051	35.80	36.50	36.55	36.60	38.70	39.60	42.25	43.45	47.25	47.95	49.95	50.15	53.85	59.60	61.50	65.35	67.30	71.15	71.95 73.90
73.101	74.00 35.80 74.05	36.50	36.55	36.60	38.75	39.65	42.30	43.45	47.25	48.00	50.00	50.20	53.85	59.65	61.55	65.40	67.35	71.15	72.00 73.95
73.151	35.85	36.55	36.60	36.65	38.80	39.65	42.30	43.45	47.30	48.05	50.05	50.25	53.90	59.65	61.60	65.45	67.40	71.20	72.05
73.201	35.85	36.55	36.60	36.65	38.85	39.65	42.35	43.50	47.30	48.05	50.10	50.30	53.90	59.70	61.65	65.45	67.45	71.20	74.20
73.251	35.85	36.55	36.60	36.65	38.90	39.70	42.35	43.50	47.30	48.05	50.15	50.35	53.95	59.70	61.70	65.50	67.50	71.25	74.15 74.25
73.301	35.90	36.60	36.65	36.70	38.95	39.70	42.40	43.50	47.35	48.10	50.20	50.40	53.95	59.75	61.75	65.50	67.55	71.25	74.20 74.30
73.351	35.90	36.65	36.70	36.75	39.00	39.70	42.40	43.55	47.35	48.15	50.25	50.45	54.00	59.75	61.80	65.55	67.60	71.30	72.30
73.401	35.90	36.65	36.70	36.75	39.05	39.75	42.45	43.55	47.35	48.15	50.30	50.50	54.00	59.80	61.85	65.55	67.65	71.30	72.35 74.45
73.451	35.95	36.70	36.75	36.80	39.10	39.75	42.45	43.55	47.40	48.20	50.35	50.55	54.05	59.80	61.90	65.60	67.70	71.35	72.40 74.50
73.501	35.95 74.55	36.70	36.75	36.80	39.15	39.75	42.45	43.60	47.40	48.20	50.40	50.60	54.05	59.85	61.95	65.60	67.75	71.35	72.45 74.45
73.551	35.95	36.75	36.80	36.85	39.20	39.80	42.50	43.60	47.40	48.25	50.45	50.65	54.10	59.85	62.00	65.60	67.80	71.40	74.50
73.601	36.00	36.75	36.80	36.85	39.25	39.80	42.55	43.60	47.45	48.25	50.50	50.70	54.10	59.90	62.05	65.65	67.85	71.40	74.70
73.651	36.00	36.80	36.85	36.90	39.30	39.80	42.55	43.65	47.45	48.30	50.55	50.75	54.15	59.90	62.10	65.70	67.90	71.45	74.75
73.701	36.00 74.80	36.80	36.85	36.90	39.35	39.85	42.60	43.65	47.45	48.30	50.60	50.80	54.15	59.95	62.15	65.70	67.95	71.45	72.70 74.70
73.751	36.05	36.80	36.85	36.90	39.40	39.85	42.60	43.65	47.50	48.30	50.65	50.85	54.20	59.95	62.20	65.75	68.00	71.50	72.75 74.75
73.801	36.05	36.85	36.90	36.95	39.45	39.85	42.65	43.70	47.50	48.35	50.70	50.90	54.20	60.00	62.25	65.75	68.05	71.50	72.80 74.95
73.851	36.05	36.90	36.95	37.00	39.50	39.90	42.65	43.70	47.50	48.40	50.75	50.95	54.25	60.00	62.30	65.80	68.10	71.55	72.85 75.00

TABLE II-1 (Sheet 23 of 23)

RCVR FREQ. (MHZ)	RESTRICTED TRANSMITTER FREQUENCIES (MHZ)																		
73.90	36.10	36.90	36.95	37.00	39.55	39.90	42.70	43.70	47.55	48.40	50.80	51.00	54.25	60.05	62.35	65.80	68.15	71.55	75.05	
73.95	36.10	36.95	37.00	37.05	39.60	39.90	42.70	43.75	47.55	48.45	50.85	51.05	54.30	60.05	62.40	65.85	68.20	71.60	75.00	
74.00	36.10	36.95	37.00	37.05	39.65	39.95	42.70	43.75	47.55	48.45	50.90	51.10	54.30	60.10	62.45	65.85	68.25	71.60	75.05	75.20
74.05	36.15	37.00	37.05	37.10	39.70	39.95	42.75	43.75	47.60	48.50	50.95	51.15	54.35	60.10	62.50	65.85	68.30	71.65	73.10	74.80
	75.25																			
74.10	36.15	37.00	37.05	37.10	39.75	39.95	42.80	43.80	47.60	48.50	51.00	51.20	54.35	60.15	62.55	65.90	68.35	71.65	73.15	74.90
	75.30																			
74.15	36.15	37.05	37.10	37.15	39.80	40.00	42.80	43.80	47.60	48.55	51.05	51.25	54.40	60.15	62.60	65.95	68.40	71.70	73.20	75.25
74.20	36.20	37.05	37.10	37.15	39.85	40.00	42.85	43.80	47.65	48.55	51.10	51.30	54.40	60.20	62.65	65.95	68.45	71.70	73.25	75.30
	75.45																			
74.25	36.20	37.05	37.10	37.15	39.90	40.00	42.85	43.85	47.65	48.55	51.15	51.35	54.45	60.20	62.70	66.00	68.50	71.75	75.50	
74.30	36.20	37.10	37.15	37.20	39.95	40.05	42.90	43.85	47.65	48.60	51.20	51.40	54.45	60.25	62.75	66.00	68.55	71.75	75.15	75.55
74.35	36.25	37.15	37.20	37.25	40.00	40.05	42.90	43.85	47.70	48.65	51.25	51.45	54.50	60.25	62.80	66.05	68.60	71.80	75.20	
74.40	36.25	37.15	37.20	37.25	40.05	42.95	43.90	47.70	48.65	51.30	51.50	54.50	60.30	62.85	66.05	68.65	71.80	73.50	75.25	75.85
	75.70																			
74.45	36.25	37.20	37.25	37.30	40.10	42.95	43.90	47.70	48.70	51.35	51.55	54.55	60.30	62.90	66.10	68.70	71.85	73.55	75.60	75.75
74.50	36.30	37.20	37.25	37.30	40.10	40.15	42.95	43.90	47.75	48.70	51.40	51.60	54.55	60.35	62.95	66.10	68.75	71.85	73.60	75.80
74.55	36.30	37.25	37.30	37.35	40.10	40.20	43.00	43.95	47.75	48.75	51.45	51.65	54.60	60.35	63.00	66.10	68.80	71.90	73.65	
74.60	36.30	37.25	37.30	37.35	40.15	40.25	43.05	43.95	47.75	48.75	51.50	51.70	54.60	60.40	63.05	66.15	68.85	71.90	75.50	75.80
	75.95																			
74.65	36.35	37.30	37.35	37.40	40.15	40.30	43.05	43.95	47.80	48.80	51.55	51.75	54.65	60.40	63.10	66.20	68.90	71.95	75.55	75.80
74.70	36.35	37.30	37.35	37.40	40.15	40.35	43.10	44.00	47.80	48.80	51.60	51.80	54.65	60.45	63.15	66.20	68.95	71.95	75.60	
74.75	36.35	37.30	37.35	37.40	40.20	40.40	43.10	44.00	47.80	48.80	51.65	51.85	54.70	60.45	63.20	66.25	69.00	72.00	73.90	
74.80	36.40	37.35	37.40	37.45	40.20	40.45	43.15	44.00	47.85	48.85	51.70	51.90	54.70	60.50	63.25	66.25	69.05	72.00	73.95	
74.85	36.40	37.40	37.45	37.50	40.20	40.50	43.15	44.05	47.85	48.90	51.75	51.95	54.75	60.50	63.30	66.30	69.10	72.05	74.00	
74.90	36.40	37.40	37.45	37.50	40.25	40.55	43.20	44.05	47.85	48.90	51.80	52.00	54.75	60.55	63.35	66.30	69.15	72.05	74.05	75.85
74.95	36.45	37.45	37.50	37.55	40.25	40.60	43.20	44.05	47.90	48.95	51.85	52.05	54.80	60.55	63.40	66.35	69.20	72.10	75.90	
75.00	36.45	37.45	37.50	37.55	40.25	40.65	43.20	44.10	47.90	48.95	51.90	52.10	54.80	60.60	63.45	66.35	69.25	72.10	75.95	
75.05	36.45	37.50	37.55	37.60	40.30	40.70	43.25	44.10	47.90	49.00	51.95	52.15	54.85	60.60	63.50	66.35	69.30	72.15		
75.10	36.50	37.50	37.55	37.60	40.30	40.75	43.30	44.10	47.95	49.00	52.00	52.20	54.85	60.65	63.55	66.40	69.35	72.15	74.30	
75.15	36.50	37.55	37.60	37.65	40.30	40.80	43.30	44.15	47.95	49.05	52.05	52.25	54.90	60.65	63.60	66.45	69.40	72.20	74.35	
75.20	36.50	37.55	37.60	37.65	40.35	40.85	43.35	44.15	47.95	49.05	52.10	52.30	54.90	60.70	63.65	66.45	69.45	72.20		
75.25	36.55	37.55	37.60	37.65	40.35	40.90	43.35	44.15	48.00	49.05	52.15	52.35	54.95	60.70	63.70	66.50	69.50	72.25		
75.30	36.55	37.60	37.65	37.70	40.35	40.95	43.40	44.20	48.00	49.10	52.20	52.40	54.95	60.75	63.75	66.50	69.55	72.25		
75.35	36.55	37.65	37.70	37.75	40.40	41.00	43.40	44.20	48.00	49.15	52.25	52.45	55.00	60.75	63.80	66.55	69.60	72.30		
75.40	36.60	37.65	37.70	37.75	40.40	41.05	43.45	44.20	48.05	49.15	52.30	52.50	55.00	60.80	63.85	66.55	69.65	72.30		
75.45	36.60	37.70	37.75	37.80	40.40	41.10	43.45	44.25	48.05	49.20	52.35	52.55	55.05	60.80	63.90	66.60	69.70	72.35		
75.50	36.60	37.70	37.75	37.80	40.45	41.15	43.45	44.25	48.05	49.20	52.40	52.60	55.05	60.85	63.95	66.60	69.75	72.35		
75.55	36.65	37.75	37.80	37.85	40.45	41.20	43.50	44.25	48.10	49.25	52.45	52.65	55.10	60.85	64.00	66.60	69.80	72.40		
75.60	36.65	37.75	37.80	37.85	40.45	41.25	43.55	44.30	48.10	49.25	52.50	52.70	55.10	60.90	64.05	66.65	69.85	72.40		
75.65	36.65	37.80	37.85	37.90	40.50	41.30	43.55	44.30	48.10	49.30	52.55	52.75	55.15	60.90	64.10	66.70	69.90	72.45		
75.70	36.70	37.80	37.85	37.90	40.50	41.35	43.60	44.30	48.15	49.30	52.60	52.80	55.15	60.95	64.15	66.70	69.95	72.45		
75.75	36.70	37.80	37.85	37.90	40.50	41.40	43.60	44.35	48.15	49.30	52.65	52.85	55.20	60.95	64.20	66.75	70.00	72.50		
75.80	36.70	37.80	37.90	37.95	40.55	41.45	43.65	44.35	48.15	49.35	52.70	52.90	55.20	61.00	64.25	66.75	70.05	72.50		
75.85	36.75	37.90	37.95	38.00	40.55	41.50	43.65	44.35	48.20	49.40	52.75	52.95	55.25	61.00	64.30	66.80	70.10	72.55		
75.90	36.75	37.90	37.95	38.00	40.55	41.55	43.70	44.40	48.20	49.40	52.80	55.25	61.05	64.35	66.80	70.15	72.55			
75.95	36.75	37.95	38.00	38.05	40.60	41.60	43.70	44.40	48.20	49.45	52.85	55.30	61.05	64.40	66.85	70.20	72.60			

became a smaller, more manageable package, and it was now possible to provide information to the field in a form less cumbersome than the Mutual Interference Tables. Thus, a circular spurious response nomogram (Figure II-1) was developed. Its purpose is to provide the field communicator with a means to determine quickly the frequencies that will be most likely to result in strong or persistent spurious emissions and responses in an AN/MRC-134/135 receiver, under normal conditions.

Procedure

The procedure that follows is for using the nomogram illustrated in Figure II-1:

1. With a straight edge, line up the received tuned frequency (on the outer ring) with the center cross of the nomogram.
2. Read and record up to three frequencies (one from each of the three inner rings).* Add ± 50 kHz (one channel) to any frequency recorded from the innermost ring.
3. Avoid all recorded frequencies, in addition to adjacent signal guardband requirements, when operating a transmitter collocated with your receiver.

Example

By performing the steps under "Procedure", above, for receiver frequencies of 50, 57.5, 71 and 76 MHz, the following results are obtained:

Receiver Frequency (MHz)	Spurious Frequencies (MHz)
50	73
57.5	34.5, 51.75
71	48, 65.25, 35.5 (± 50 kHz)
76	53, 70.25, 38 (± 50 kHz)

*Three inner rings are provided only for receiver tuned frequencies between 60 and 76 MHz. Between 53 and 60 MHz, only two inner rings are provided; and for frequencies below 53 MHz, only one inner ring appears. Note that the frequencies of 30 MHz and 76 MHz appear at the same point on the outer ring, and that only one inner ring should be used when the frequency is 30 MHz but all three inner rings are used with 76 MHz.

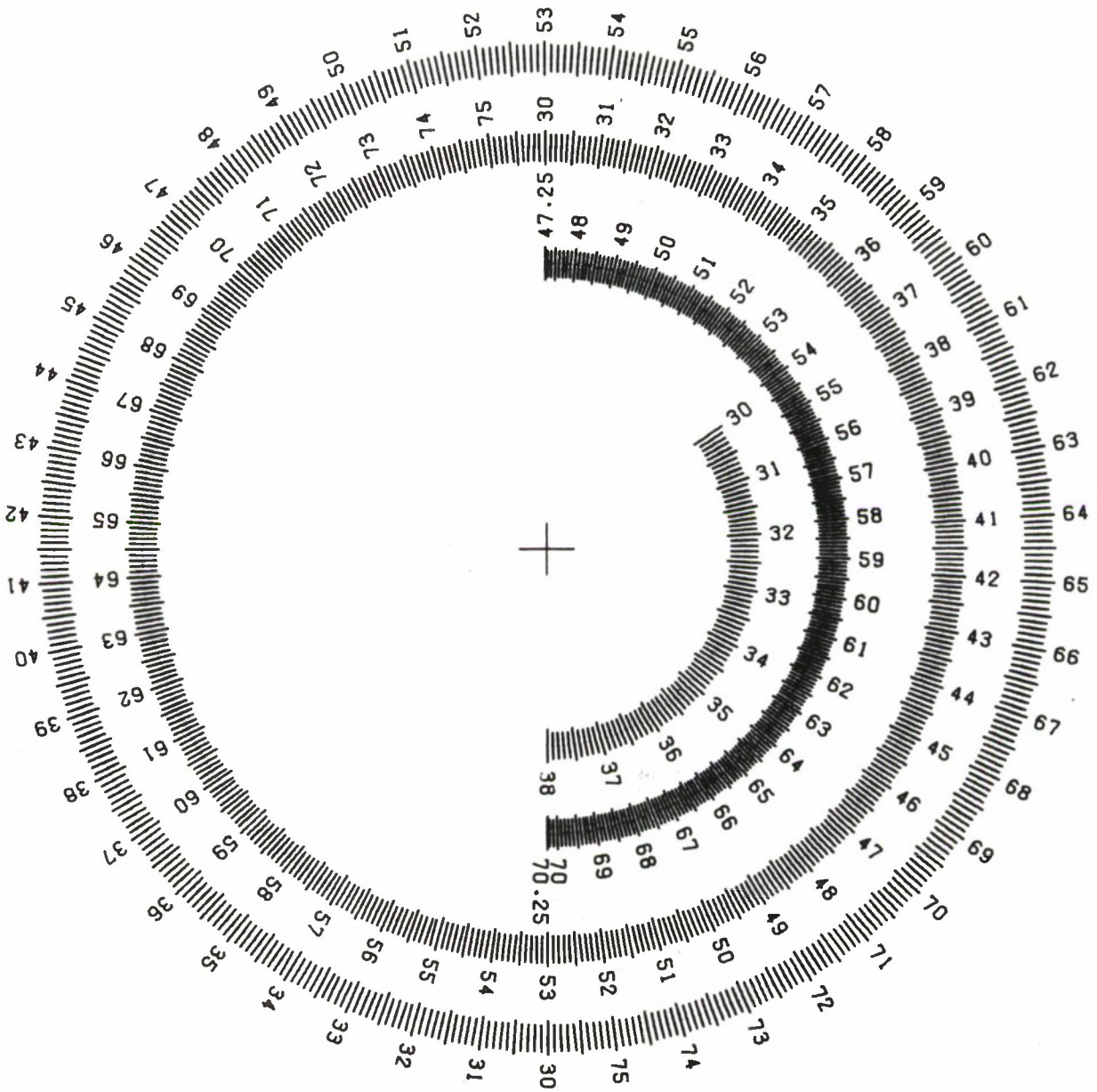


Figure II-1. Spurious Response Nomogram

APPENDIX III

VHF MULTICHANNEL EQUIPMENT FREQUENCY SELECTION AND SITING GUIDE

GENERAL

The selection of frequencies for collocated operating transceivers must provide for channel separations to preclude adjacent channel signal interference primarily. In this type of deployment the possibility of interference from intermodulation and spurious signals and responses is present but of lower order concern than the adjacent channel problem. Accordingly a simple procedure for selection of frequencies based on adjacent channel restrictions is provided here as the first order consideration for cosite electromagnetic compatibility.

PROBLEM ELEMENTS

In order to prevent adjacent signal interference, the communicator must choose frequencies which are far enough away from the receiver tuned frequency to be outside of the adjacent signal area. The question is, for a given set of conditions, what guardband is required? Knowing the length and type of the communications path, the distance to the closest cosited transmitter antenna, and the equipment and antenna arrangement, the field communicator can determine the strength of the desired signals he will receive, and the cosite frequency separation required, by using the path loss and frequency-distance curves in this appendix.

Marine Corps VHF receivers should not be tuned to frequencies that involve interactions with an internal oscillator or are multiples of the receiver intermediate frequency. The frequencies to be avoided are (all MHz):

AN/TRC-166 (PRC-25)	AN/MRC-134/135 (R442)
34.35	34.50
45.80	46.00
57.25	57.50
57.75	69.00
68.70	
69.30	

PROCEDURE

1. To begin, complete the following input information:

   a. Antenna Type:
      40-FOOT LOG PERIODIC _____
      (AS-2236)

      30-FOOT LOG PERIODIC _____
      (AS-2851/TR MANPACK)

      10-FOOT WHIP _____

   b. Type of Terrain:
      SMOOTH PLAINS _____

      SLIGHTLY ROLLING _____

      HILLY _____

      MOUNTAINOUS _____

   c. Type of Cover:
      VEGETATIVE _____

      DESERT _____

      MARSH _____

   d. Band of Operation LOW_____ HIGH _____

   e. Desired Link Path Distance _____ km

   f. Is there a jungle canopy? YES _____ NO _____

   g. Equipment in use:
      AN/MRC-134 _____

      AN/MRC-135 _____

      AN/TRC-166 _____

   h. Is there a COSITE constraint?

      YES (Antennas separated by 50 FEET OR LESS) _____

      NO (Antennas separated by MORE THAN 50 FEET) _____

i. Is diplexer in use? YES _____ NO _____

j. Antenna Polarization: VERTICAL _____

HORIZONTAL _____

2. Enter TABLE III-1 with your combination of antenna type, terrain roughness, and terrain cover (items a., b., and c.) to determine the number of the appropriate propagation chart, and find the chart from among Figures III-3 through III-21.

3. Enter the chart at the bottom with Path Distance (item e.) and draw a vertical line to intersect the appropriate curve (depending on type of terrain and cover).

4. Draw a horizontal line from the intersection to the left edge of the chart (Basic Transmission Loss line) and record the transmission loss.

5. On SCALE 1 of the DESIRED SIGNAL STRENGTH NOMOGRAPH (Figure III-2) select the appropriate combination of equipment type (item g.) and antenna type (item a.).

6. Find the point on SCALE 2 corresponding to the recorded transmission loss value (from step 4).

7. Lay a straight edge between the selected points on SCALES 1 and 2 and mark the intersection with SCALE 3.

8. From the intersection point on SCALE 3, lay a straight edge horizontally to the left and note where it intersects the S/R_s Ratio column as appropriate to the equipment in use. Read and record the signal strength (marginal, medium or strong as indicated by the Legend).

9. If there is no cosite constraint or if no diplexer is in use, locate antennas as antennas as far apart as cable limitations will allow, and refer to step 10 for frequency guidance. If there is a cosite constraint *and* a diplexer is being used, use frequencies which are separated by the following amounts:

Equipment	REQUIRED FREQUENCY SEPARATION (MHz)					
	LOW TUNING RANGE			HIGH TUNING RANGE		
	Marginal Signal	Medium Signal	Strong Signal	Marginal Signal	Medium Signal	Strong Signal
AN/MRC-134	2.85	1.15	0.55	6.60	2.65	1.25
AN/MRC-135	4.85	1.95	0.90	11.30	4.50	2.10
AN/TRC-166	2.35	1.40	0.90	2.35	1.40	0.90

TABLE III-1

INDEX OF FIGURE NUMBERS FOR PATH LOSS DETERMINATION

	ANTENNA	10' WHIP						30' LPA						40' LPA					
TERRAIN	Roughness	Smooth or Slightly Rolling Plains			Rolling or Hilly		Mountains	Smooth or Slightly Rolling Plains			Rolling or Hilly		Mountains	Smooth or Slightly Rolling Plains			Rolling or Hilly		Mountains
	Cover	Desert	Marsh	V* Vegetative	Desert	V* Vegetative	V* Vegetative	Desert	Marsh	V* Vegetative	Desert	V* Vegetative	V* Vegetative	Desert	Marsh	V* Vegetative	Desert	V* Vegetative	V* Vegetative
BAND	LOW	3	5	7	3	7	7	9	10	12	9	12	14	16	17	18	16	18	20
	HIGH	4	6	8	4	8	8	9	11	13	9	13	15	16	17	19	16	19	21

* In addition to curves for normal vegetation conditions, the figures indicated in this column contain information applicable to Jungle propagation.

10. Find the Frequency-Distance chart (Figures III-22 through III-31) that corresponds to input items a., d., g., and j.

11. From the point on the left edge of the chart corresponding to the distance between cosited antennas, move horizontally to intersect the appropriate curve (depending on signal strength-see step 8).

12. From the point of intersection, drop vertically to the bottom line of the chart and read the required frequency separation.

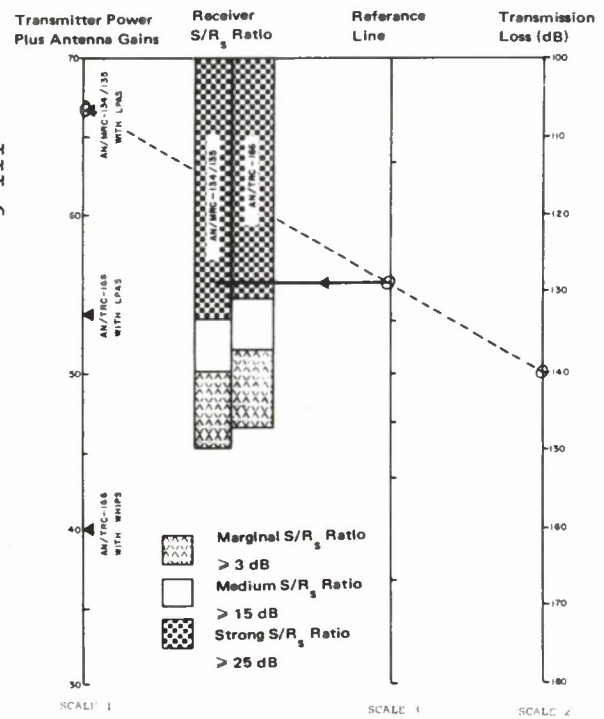
13. Choose a transmitter frequency that is separated from the receiver tuned frequency by at least the amount of separation indicated in step 12.

An example of this procedure is illustrated in Figure III-1.

Assumed Input Information:

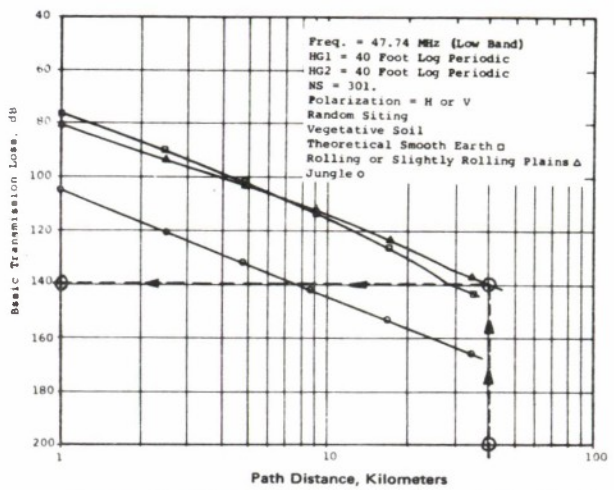
a. Antenna Type - 40' Log-Periodic
b. Type of Terrain - Slightly Rolling
c. Type of Soil - Vegetative
d. Band of Operation - Low
e. Path Distance - 40 km
f. No jungle canopy
g. Equipment in Use - AN/MRC-135
h. Cosite Constraint - YES (40')
i. NO Diplexer
j. Antenna Polarization - Horizontal

B.



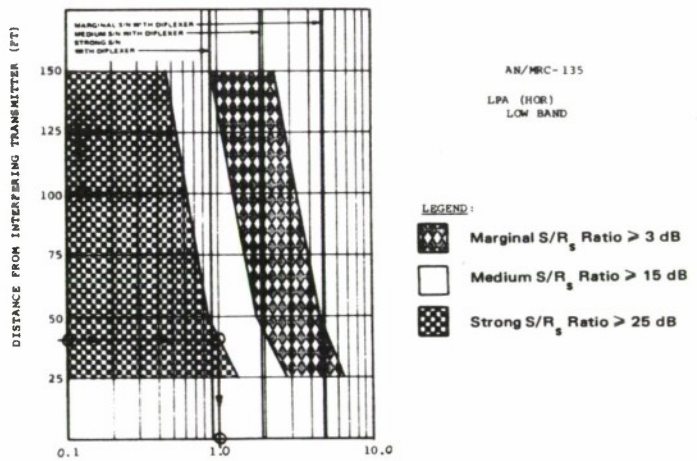
Signal Strength Nomograph

A.



Propagation Chart (Median Basic Transmission Loss)

C.



F-D Separation Criteria

Figure III-1. Example of Procedure

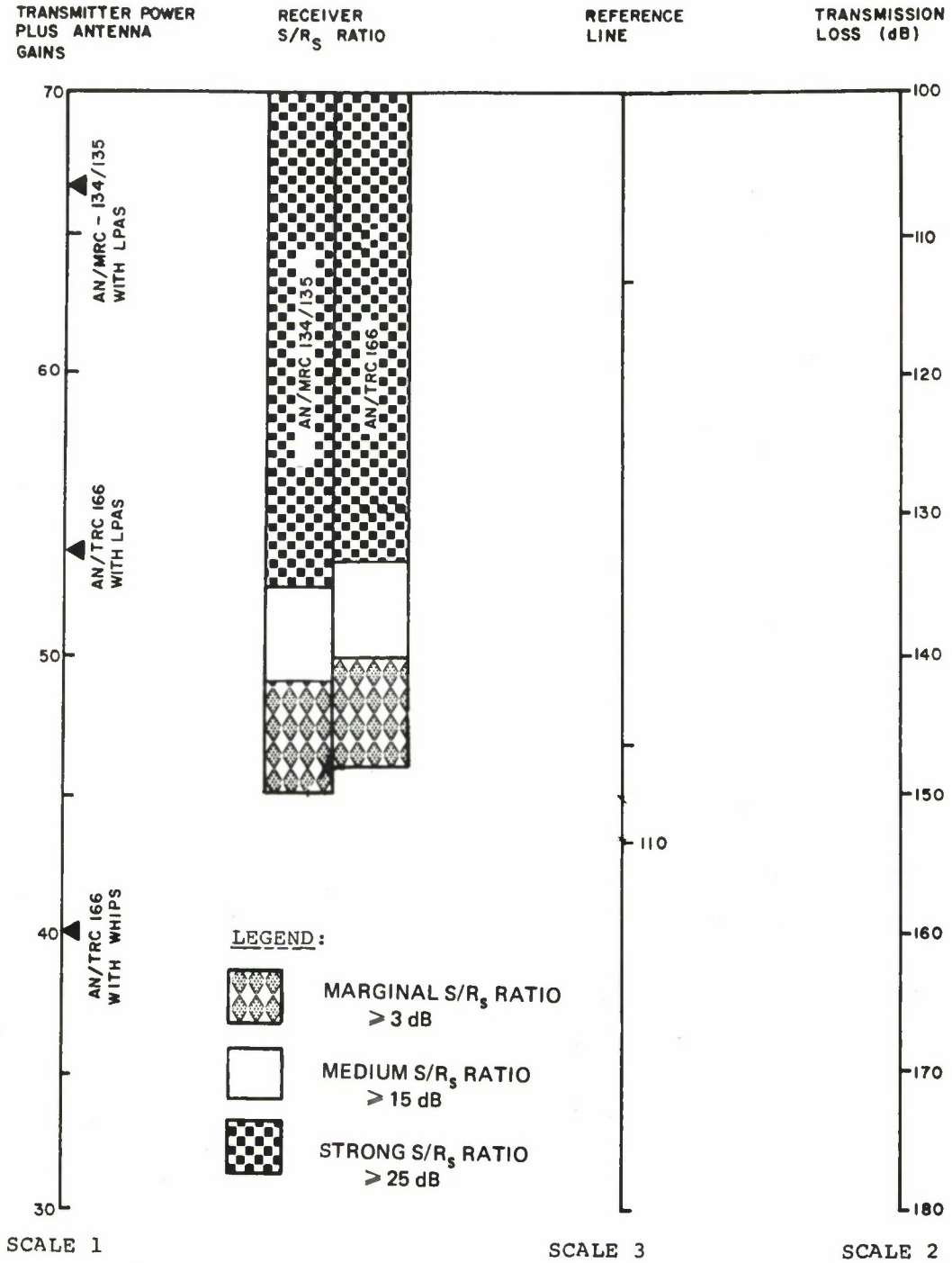


Figure III-2. Desired Signal Strength Nomograph

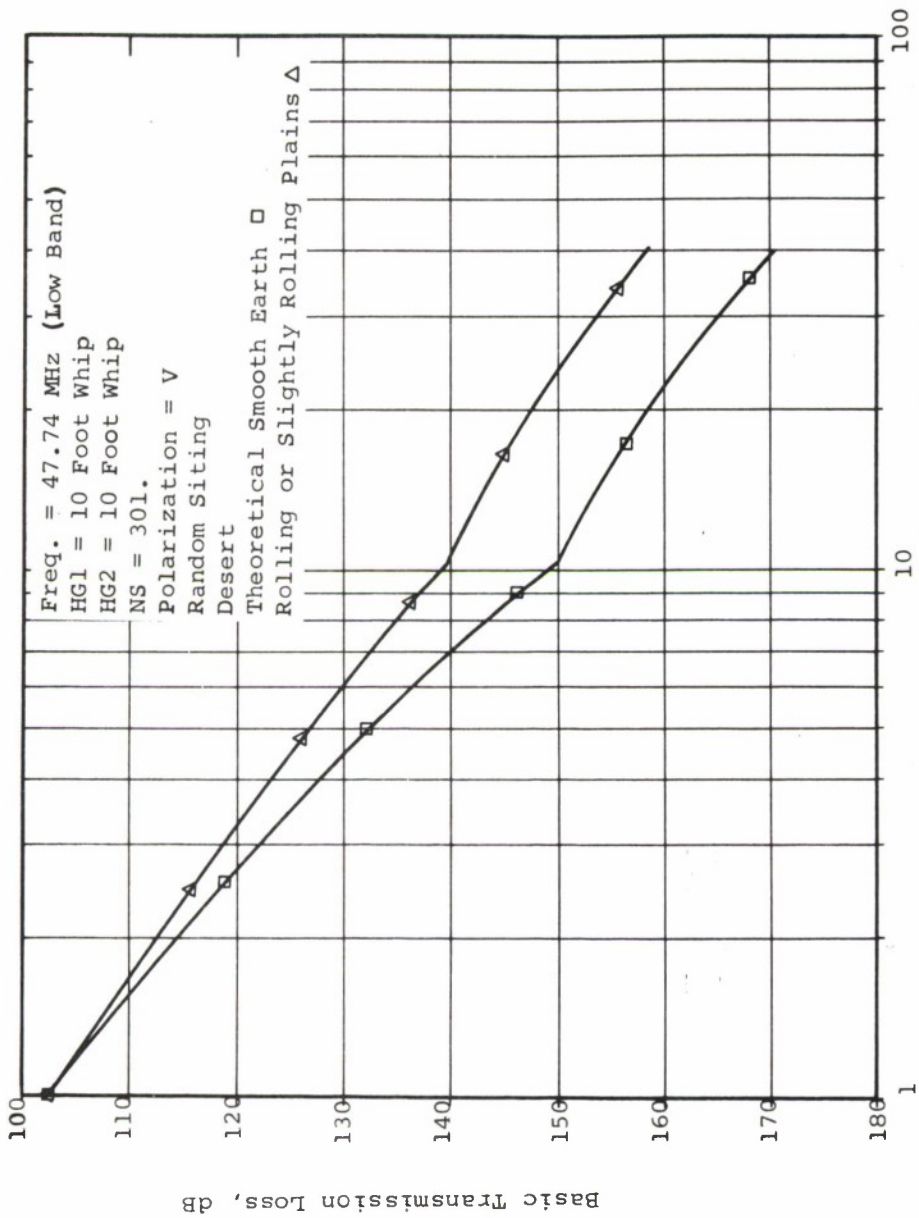


Figure III-3. Median Basic Transmission Loss for Conditions Indicated

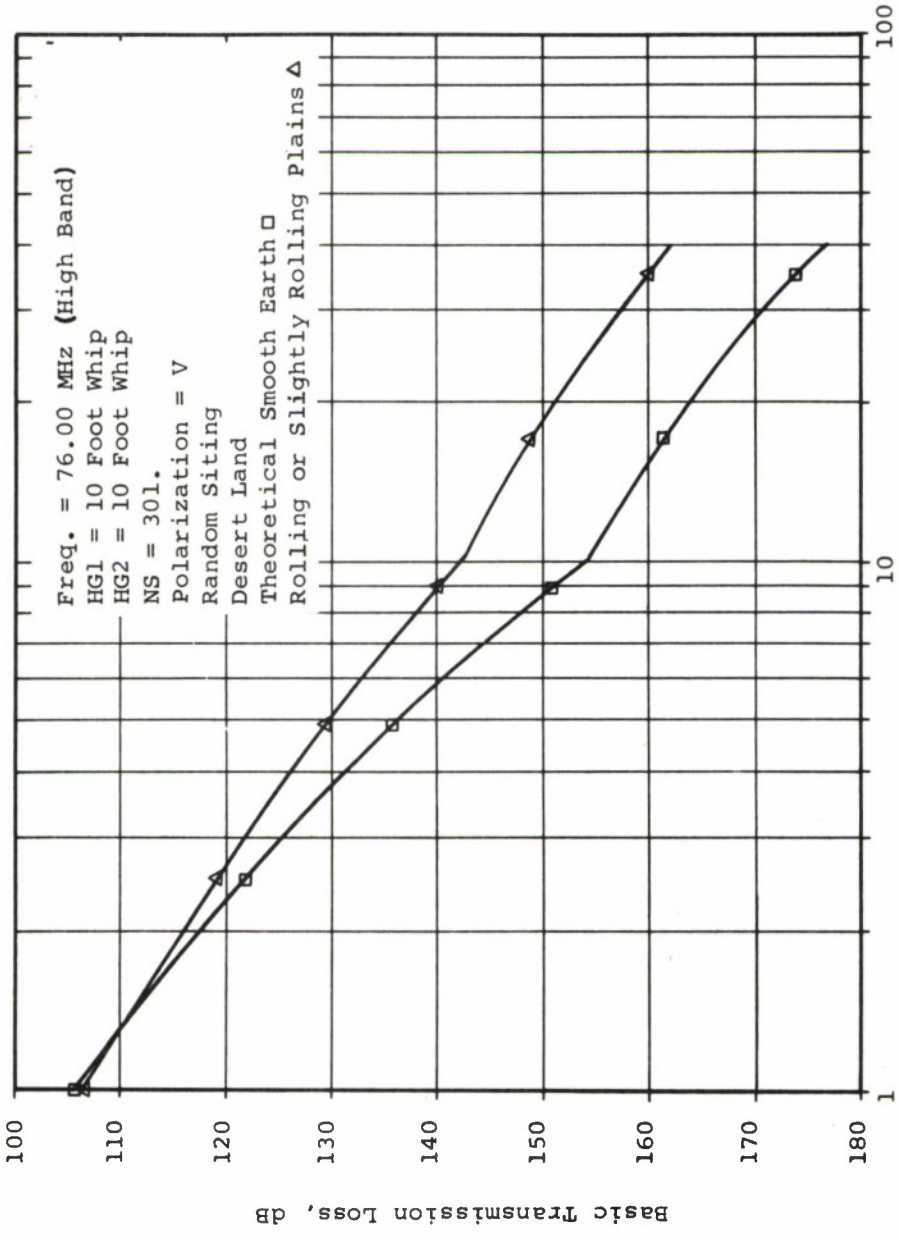


Figure III-4. Median Basic Transmission Loss for Conditions Indicated

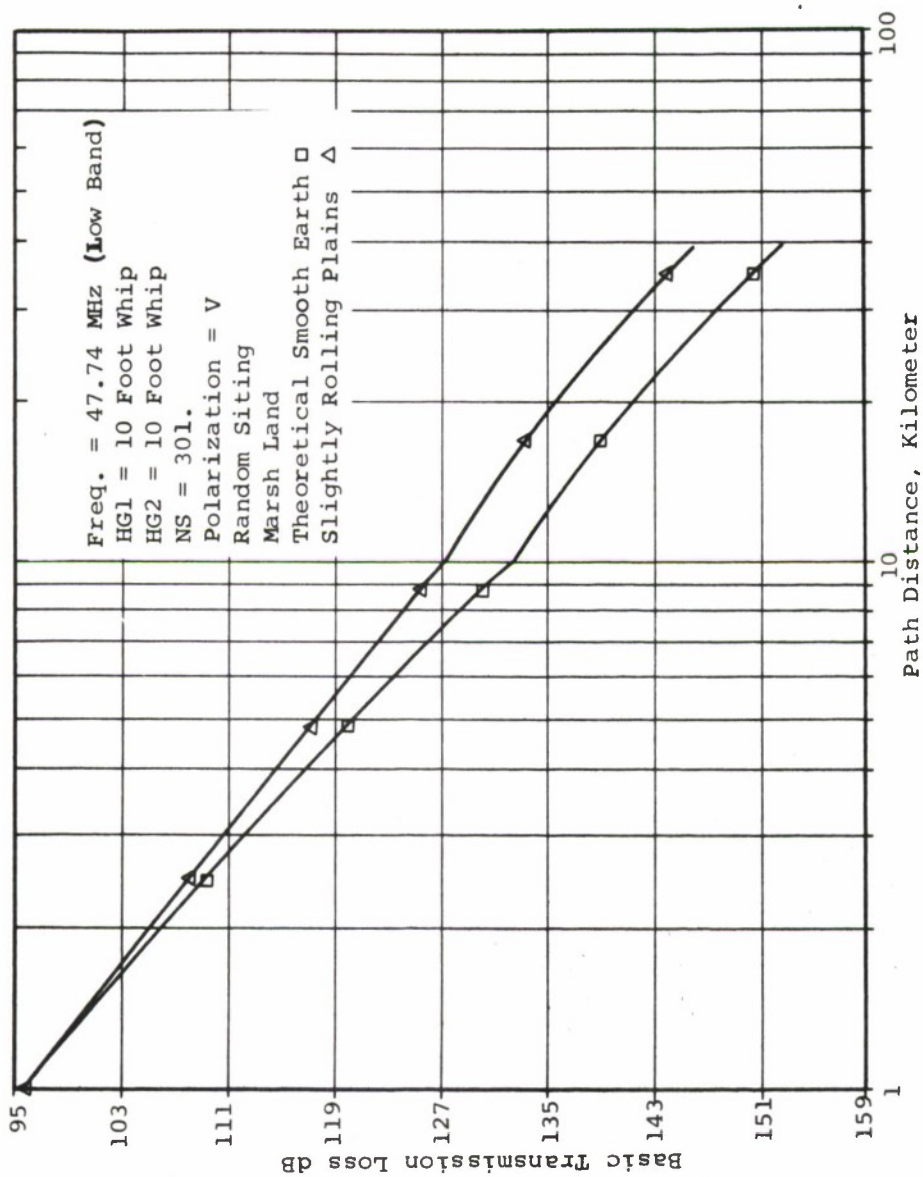


Figure III-5. Median Basic Transmission Loss for Conditions Indicated

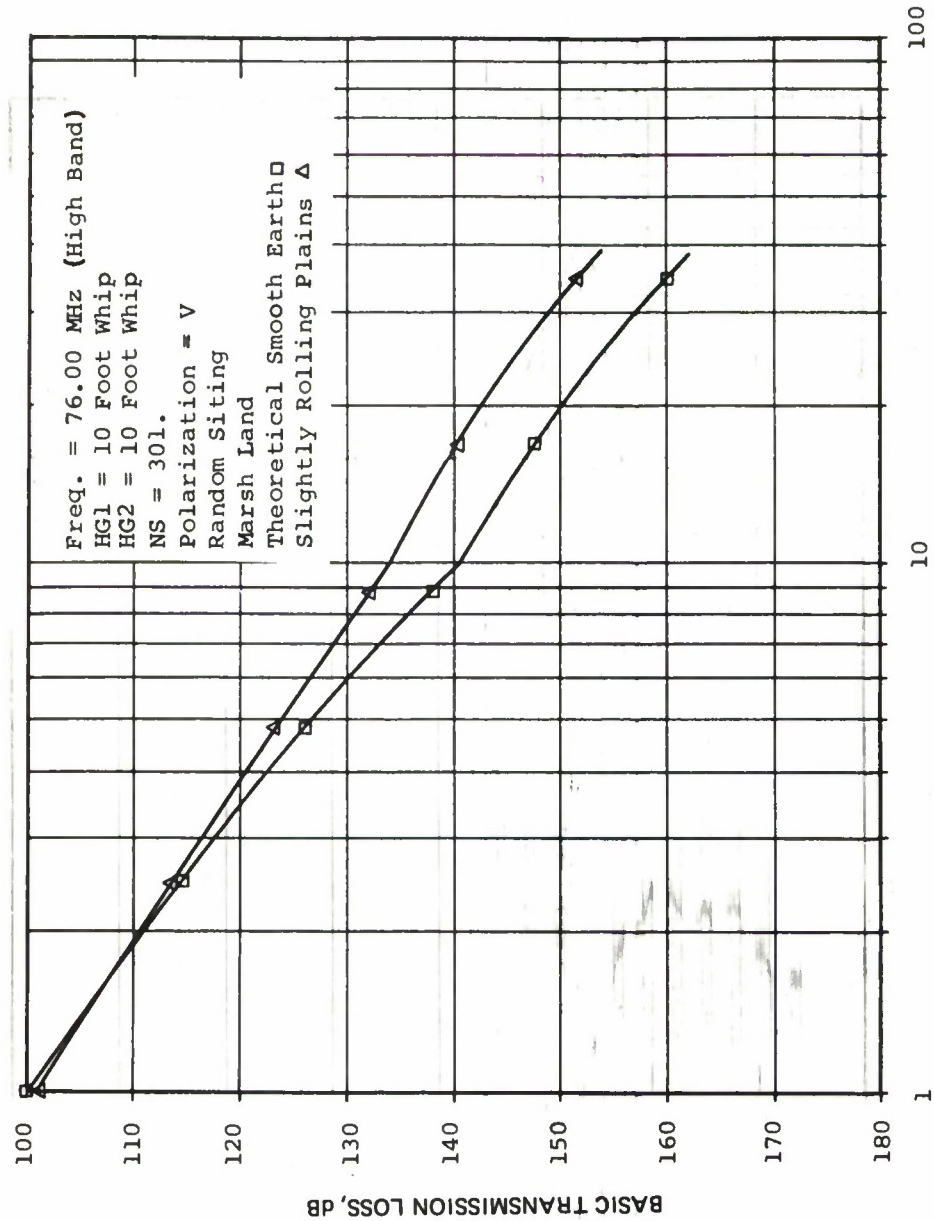


Figure III-6. Median Basic Transmission Loss for Conditions Indicated

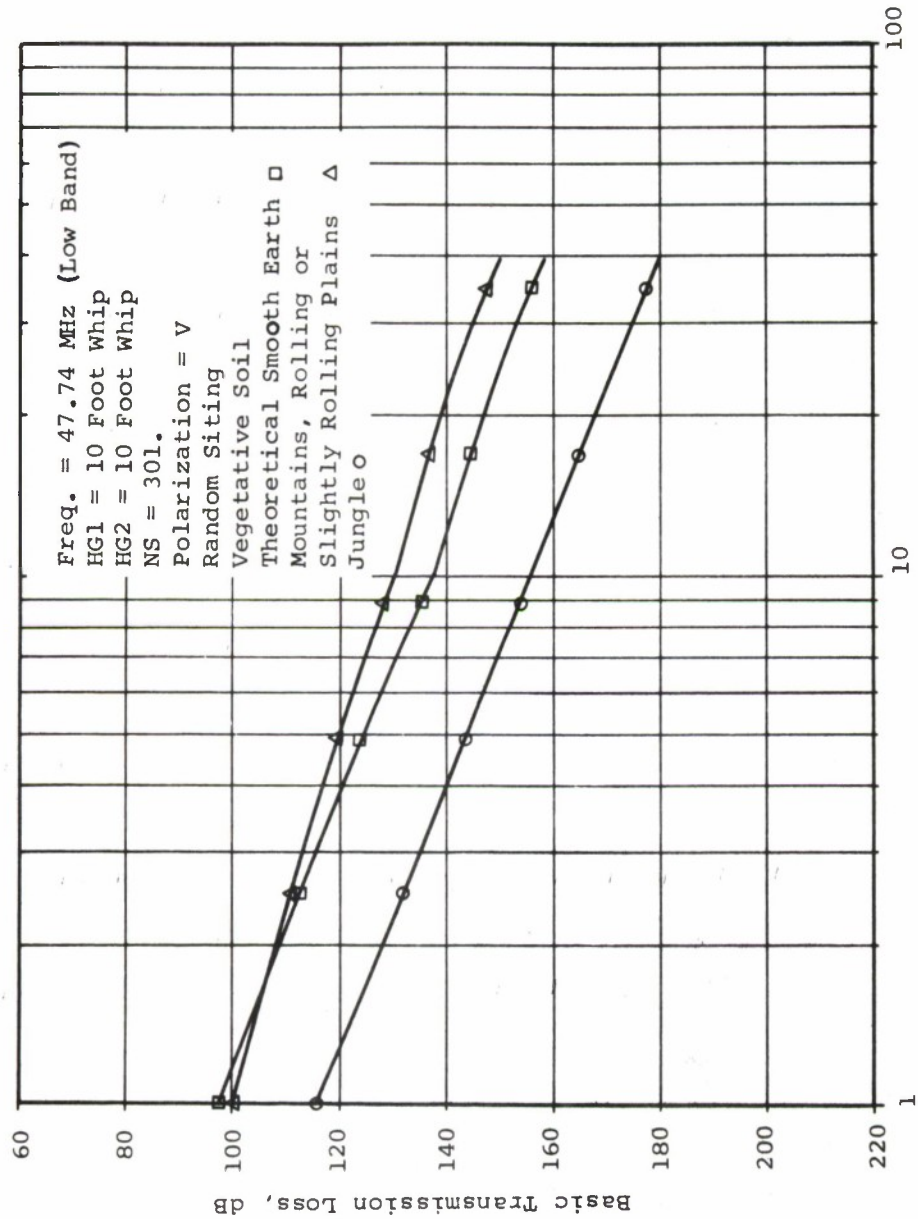


Figure III-7. Median Basic Transmission Loss for Conditions Indicated

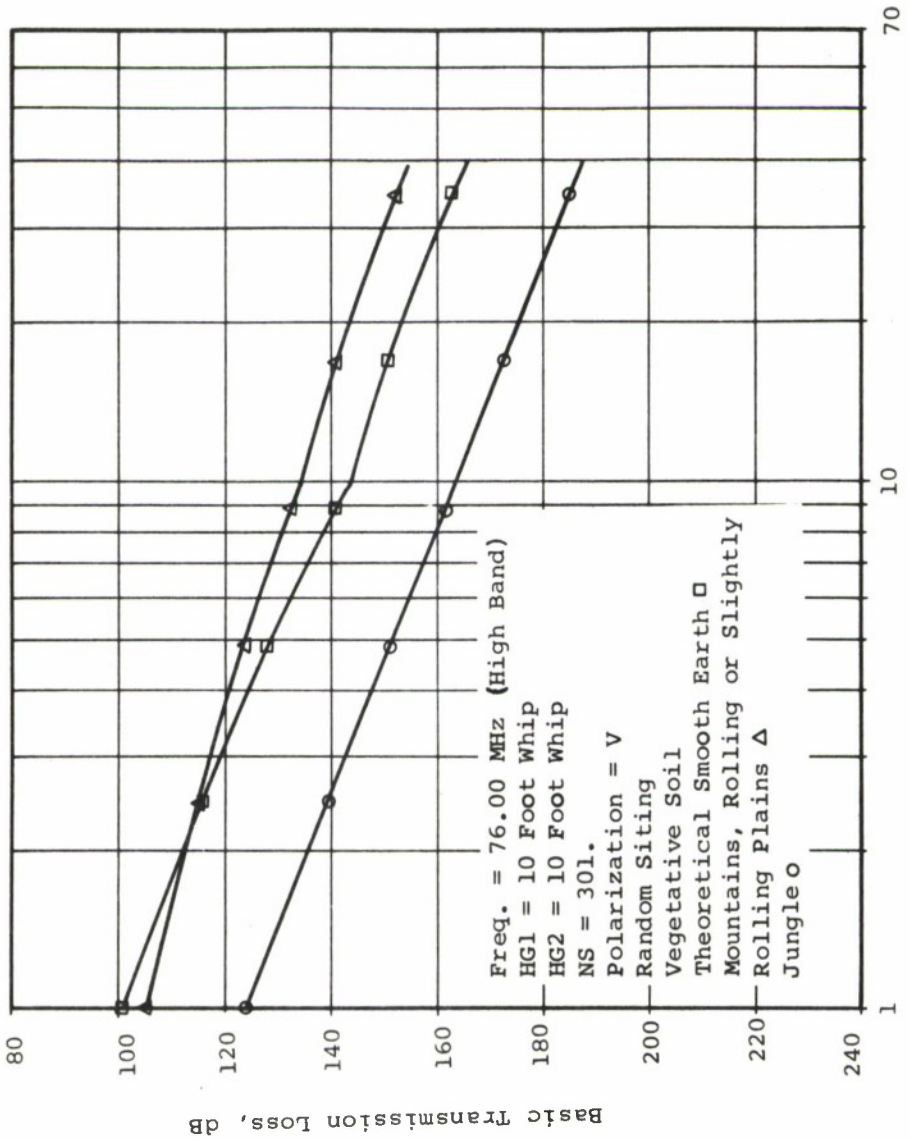


Figure III-8. Median Basic Transmission Loss for Conditions Indicated

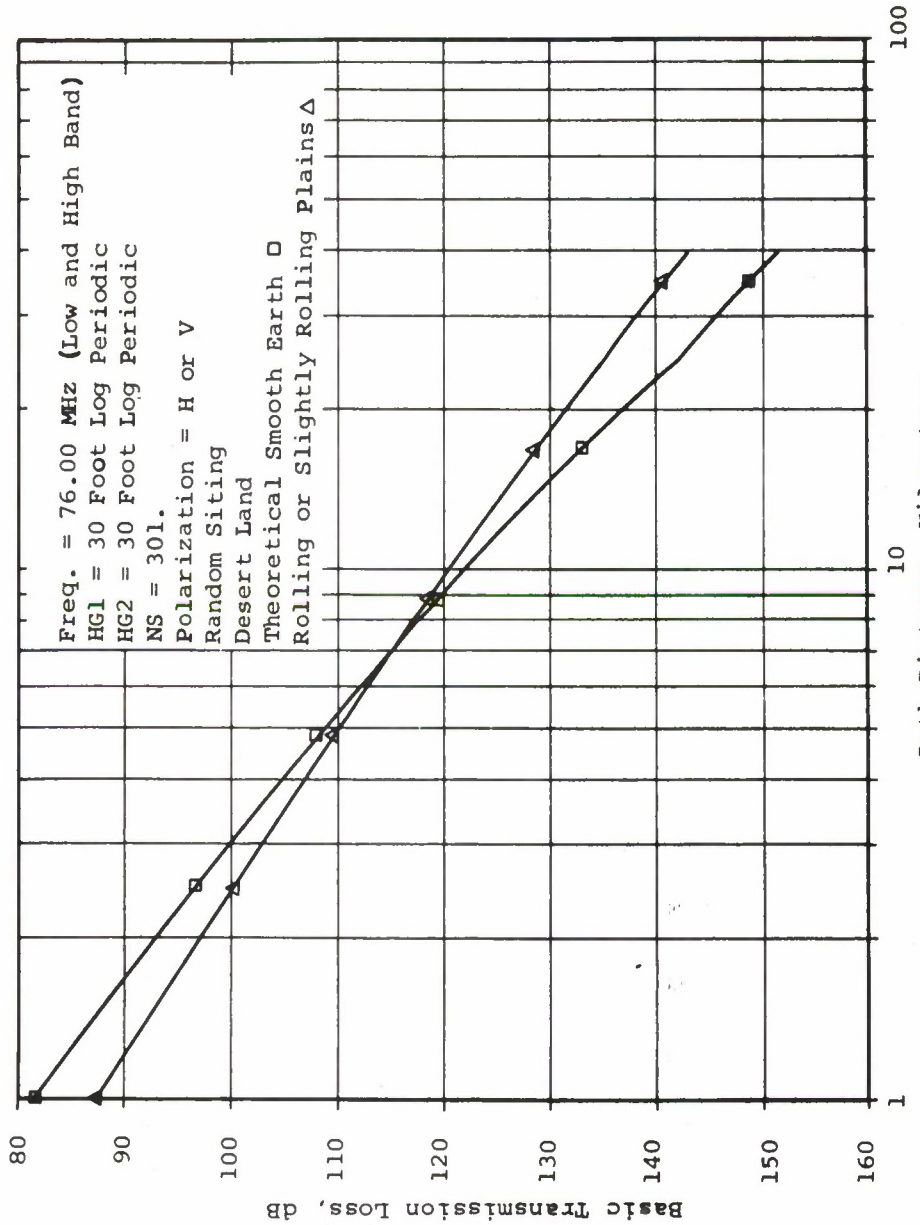


Figure III-9. Median Basic Transmission Loss for Conditions Indicated

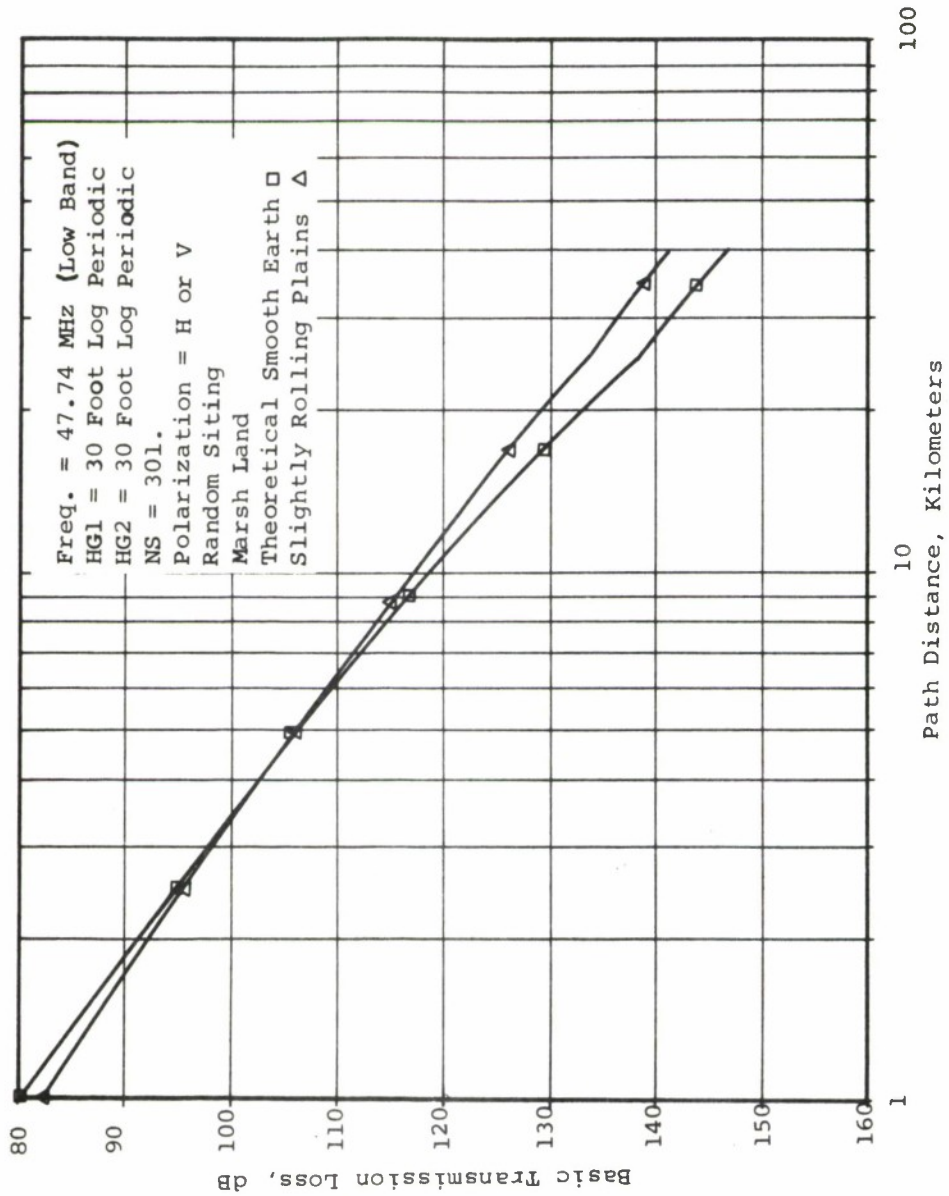


Figure III-10. Median Basic Transmission Loss for Conditions Indicated

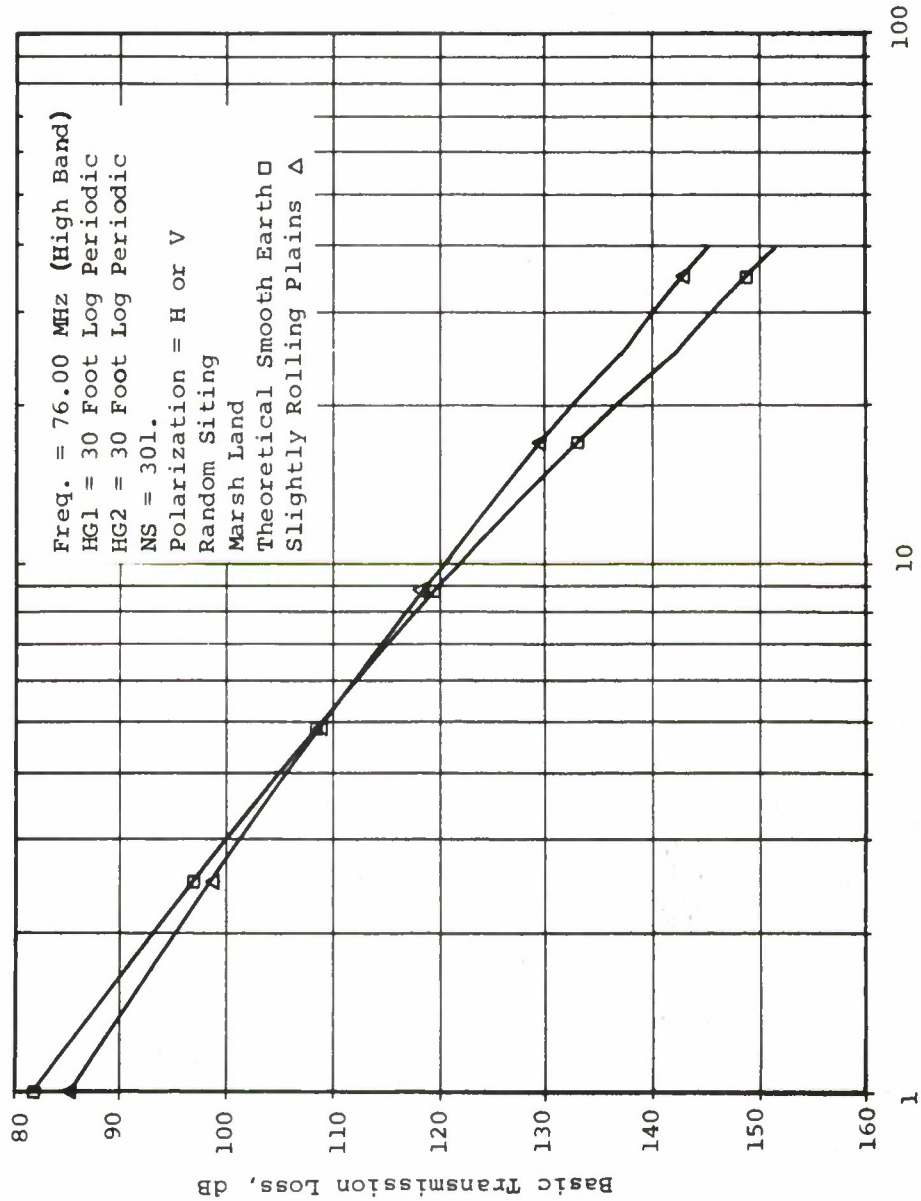


Figure III-11. Median Basic Transmission Loss for Conditions Indicated

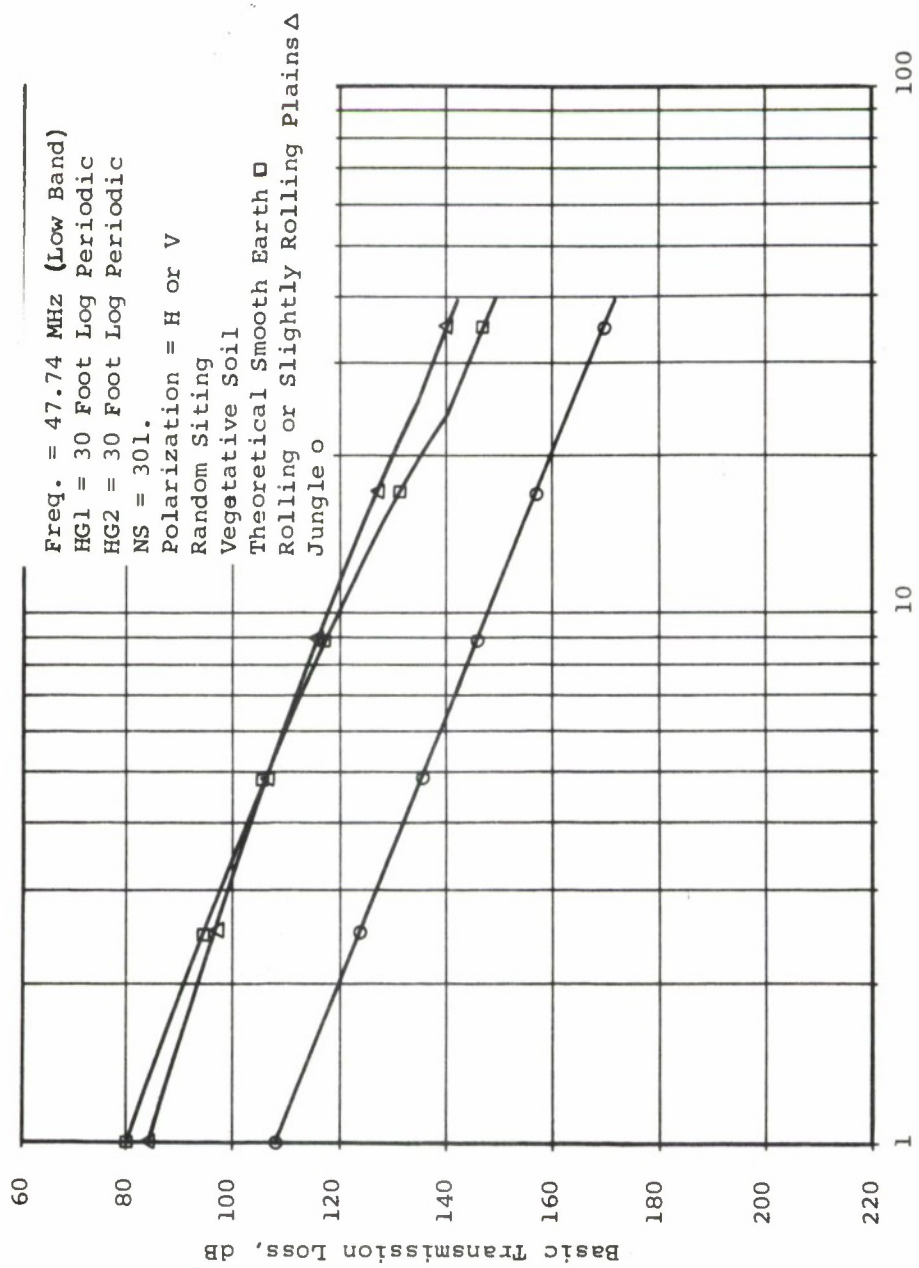


Figure III-12. Median Basic Transmission Loss for Conditions Indicated

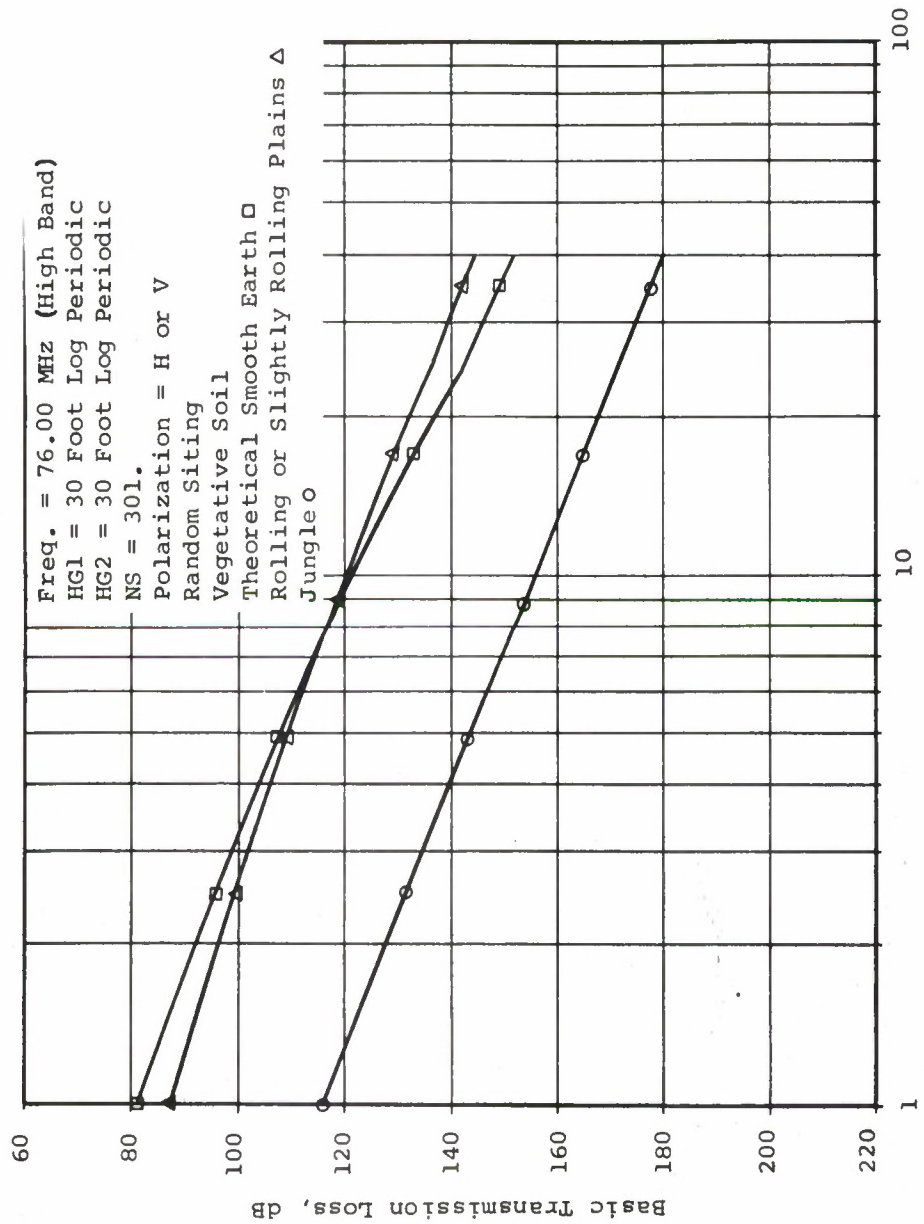


Figure III-13. Median Basic Transmission Loss for Conditions Indicated

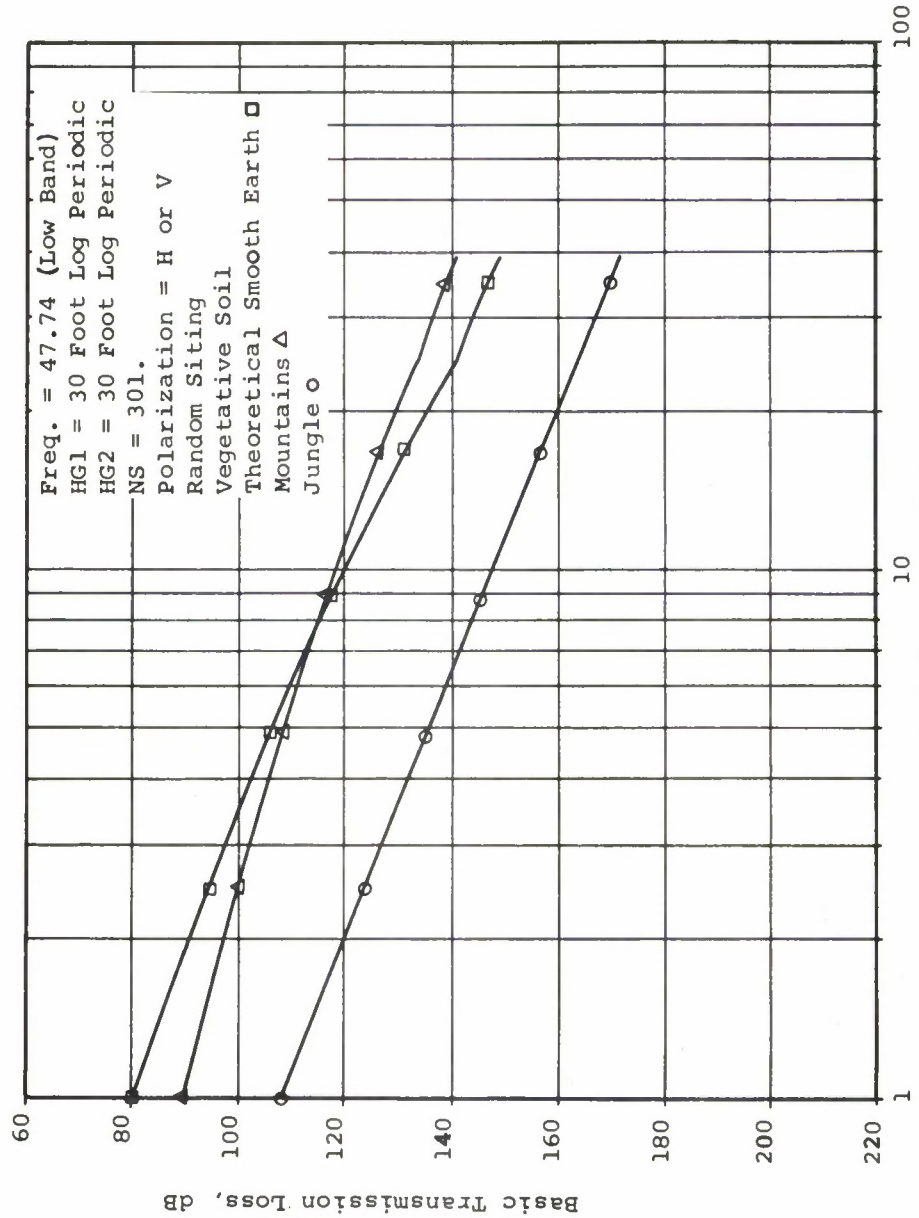


Figure III-14. Median Basic Transmission Loss for Conditions Indicated

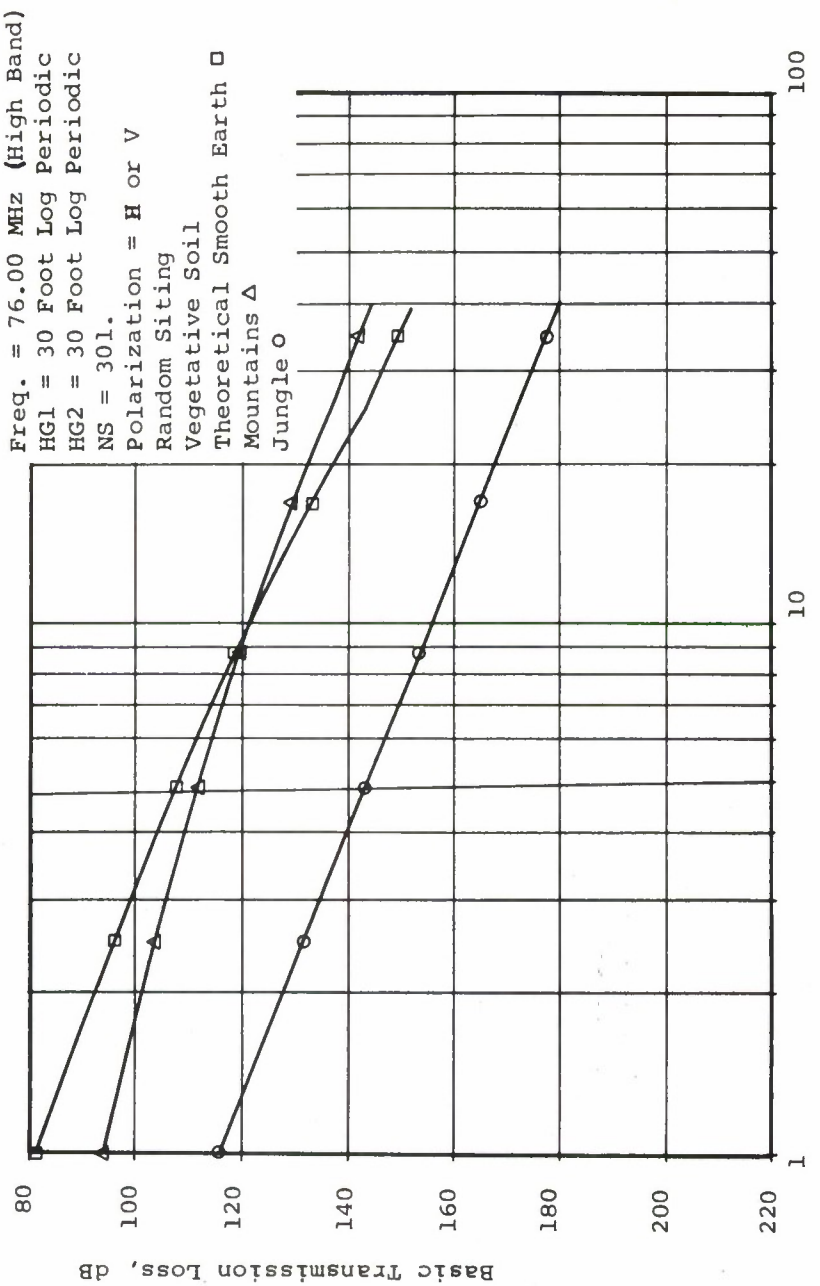


Figure III-15. Median Basic Transmission Loss for Conditions Indicated

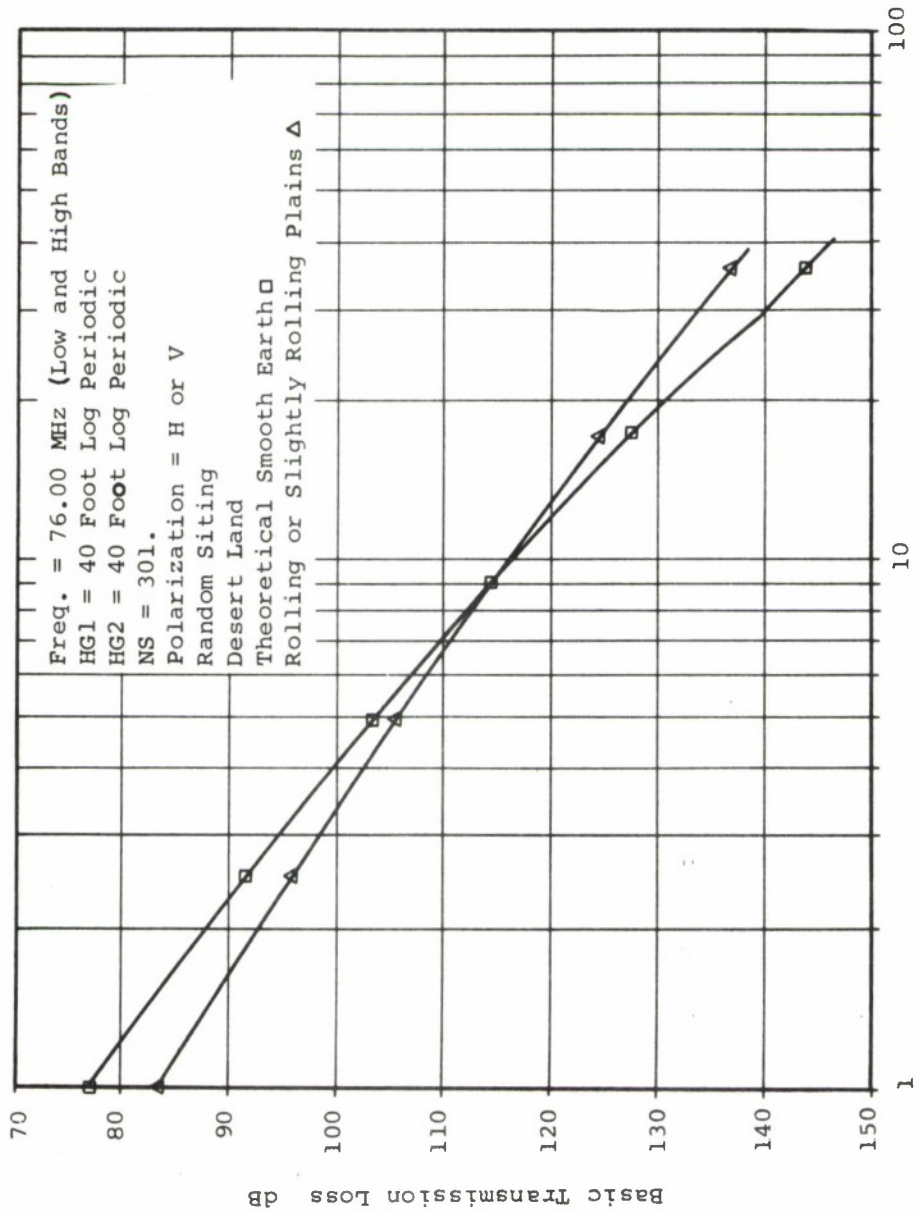


Figure III-16. Median Basic Transmission Loss for Conditions Indicated

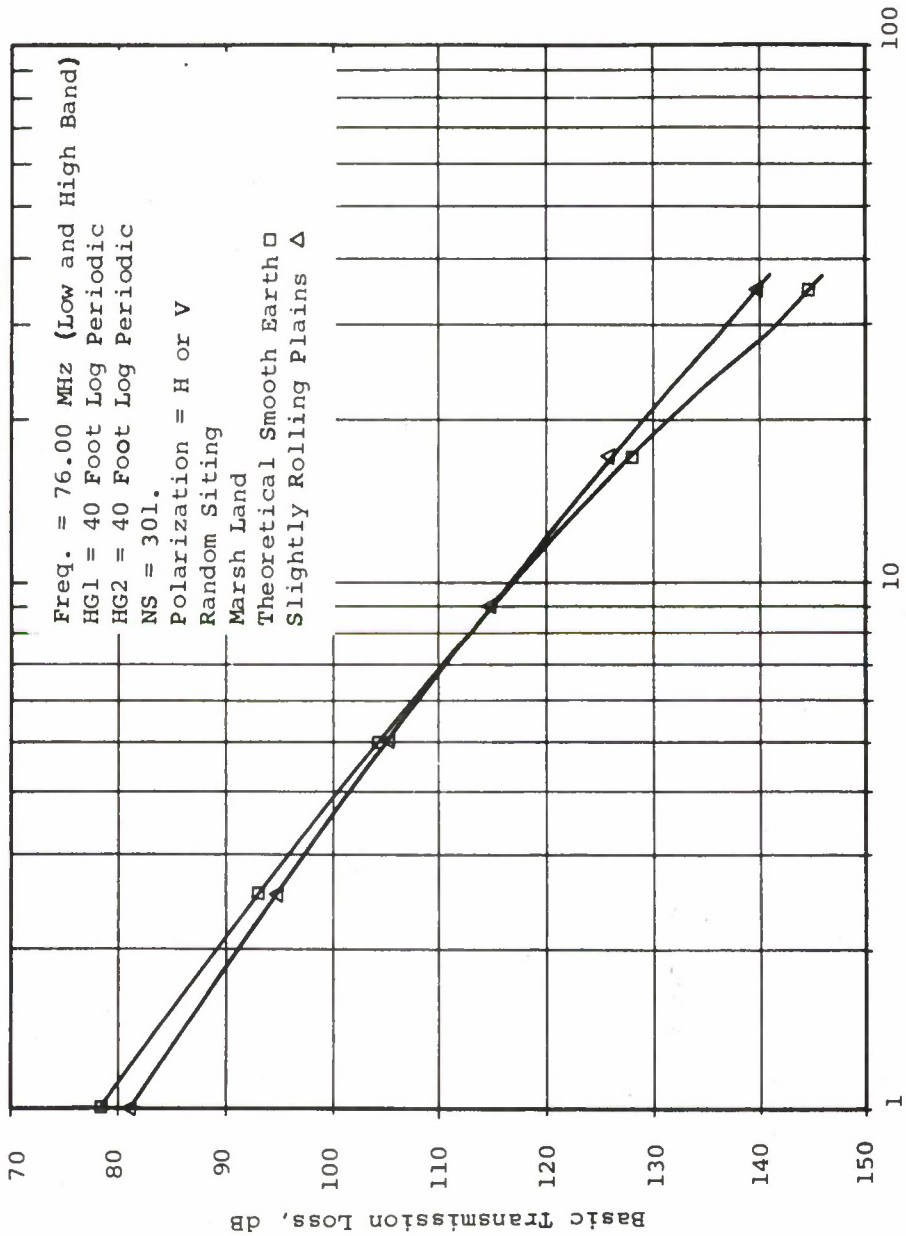


Figure III-17. Median Basic Transmission Loss for Conditions Indicated

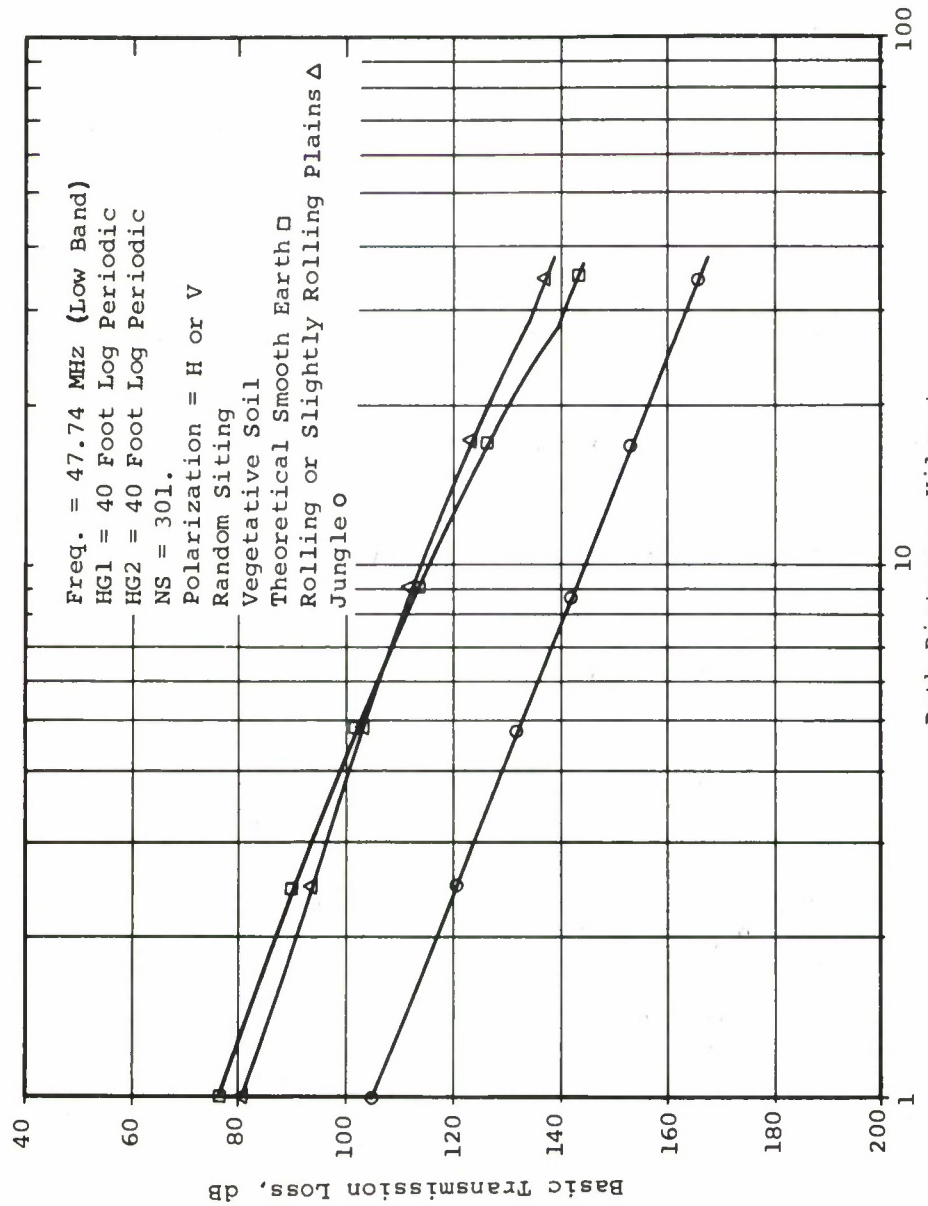


Figure III-18. Median Basic Transmission Loss for Conditions Indicated

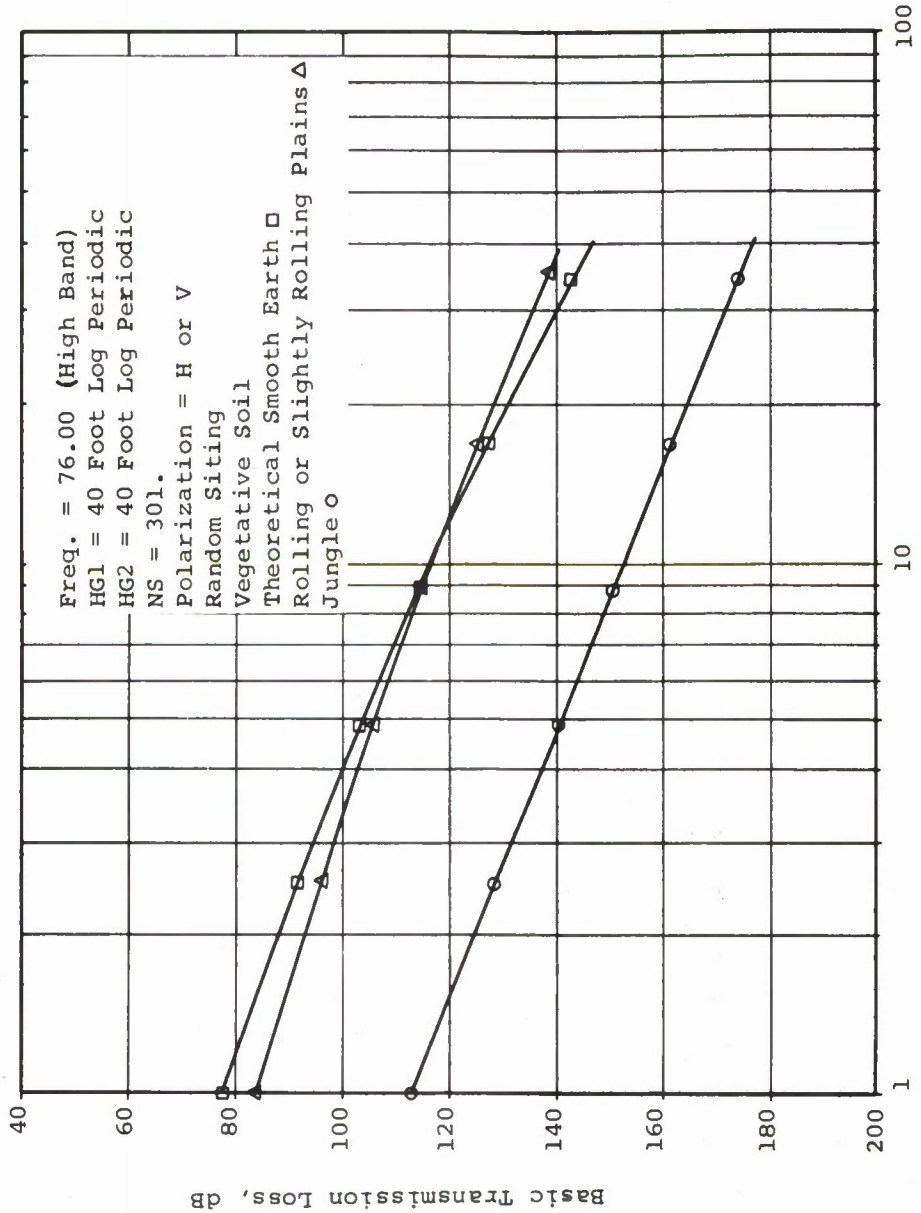


Figure III-19. Median Basic Transmission Loss for Conditions Indicated

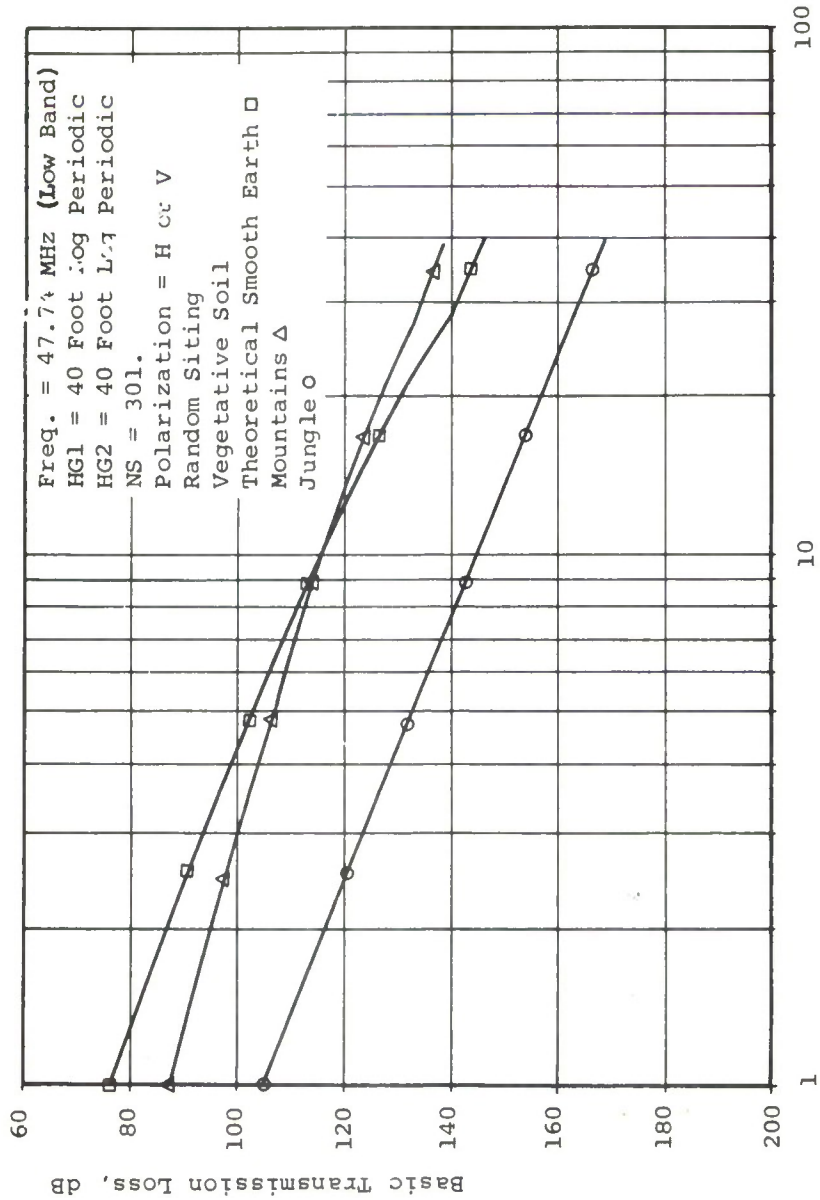


Figure III-20. Median Basic Transmission Loss for Conditions Indicated

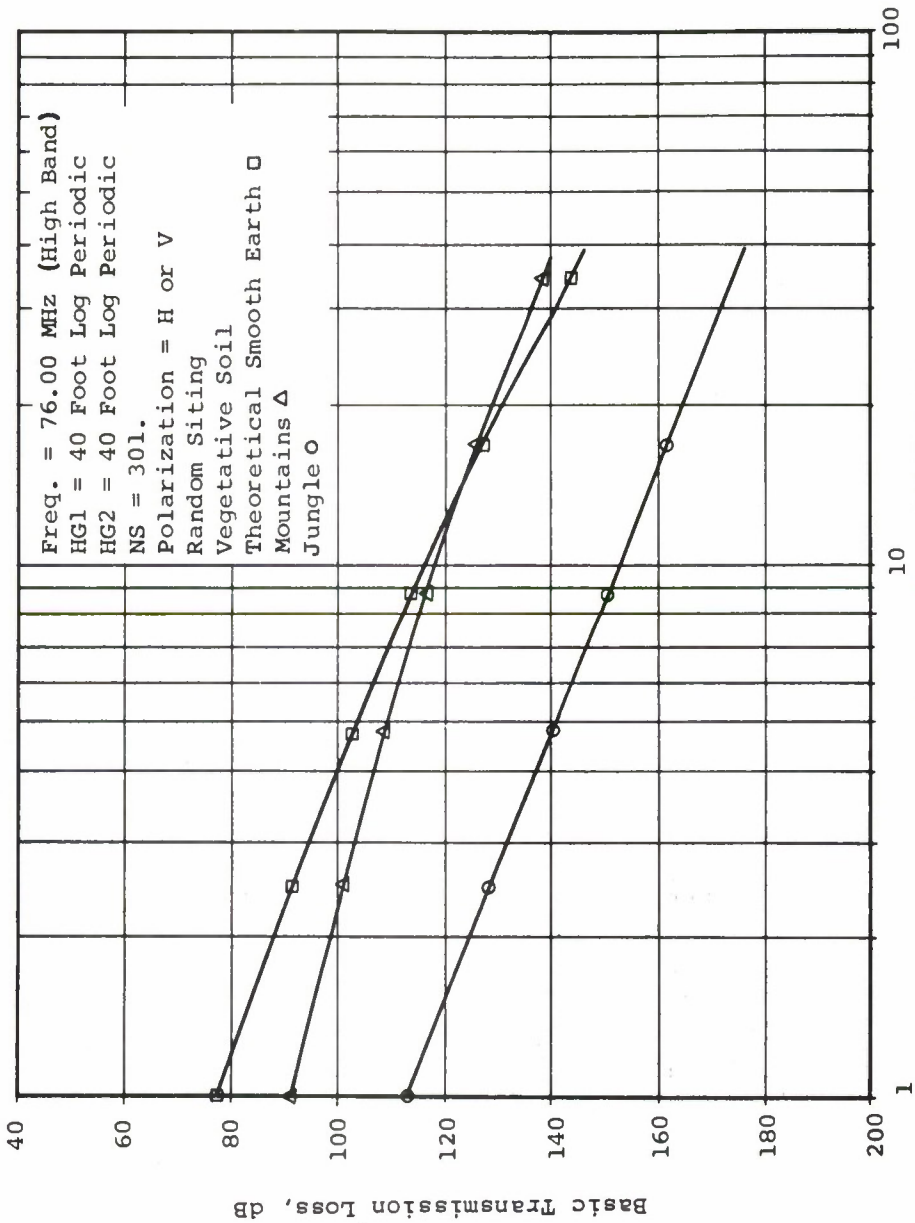


Figure III-21. Median Basic Transmission Loss for Conditions Indicated

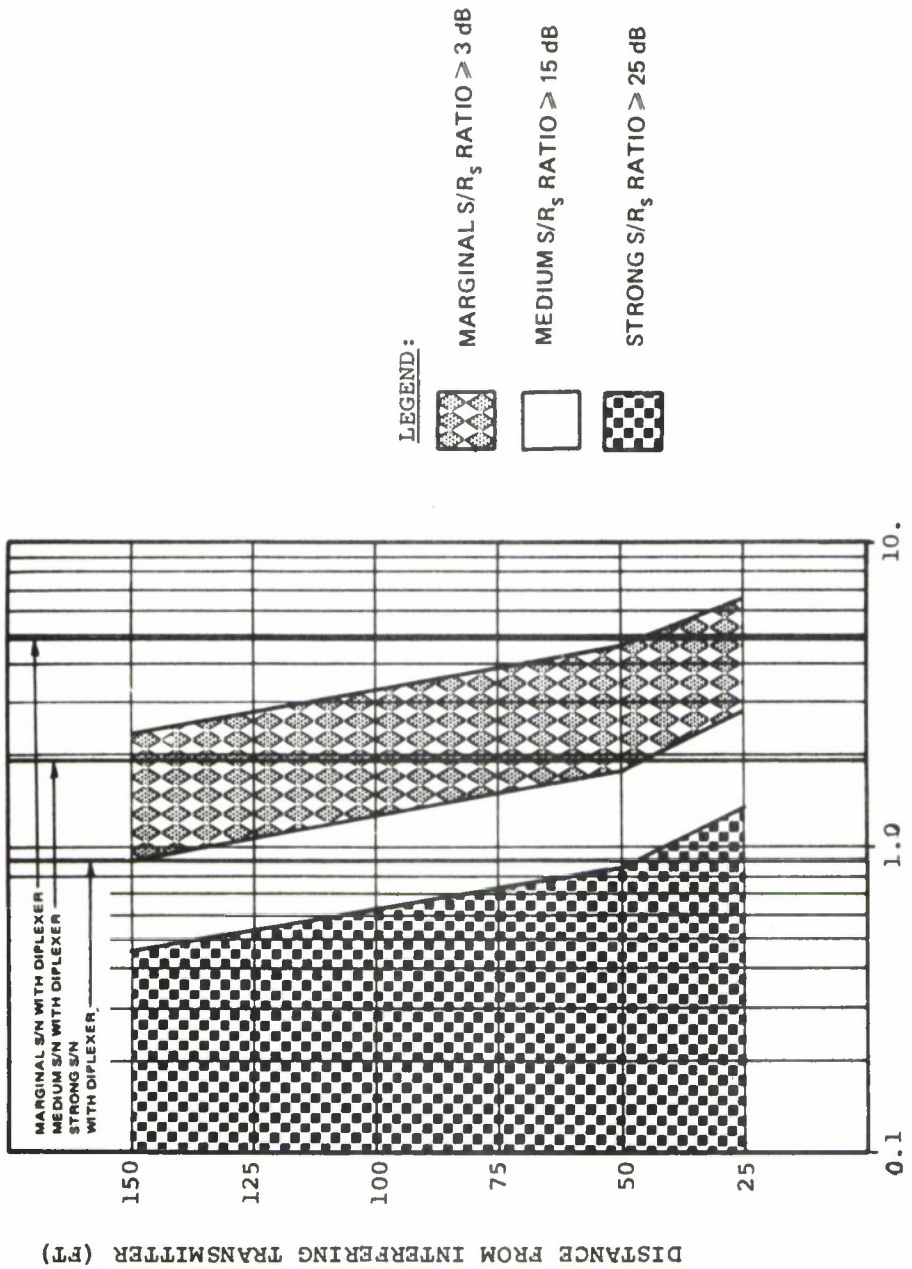


Figure III-22. F-D Curves for AN/MRC-135, Low Band, with Horizontally Polarized LPA

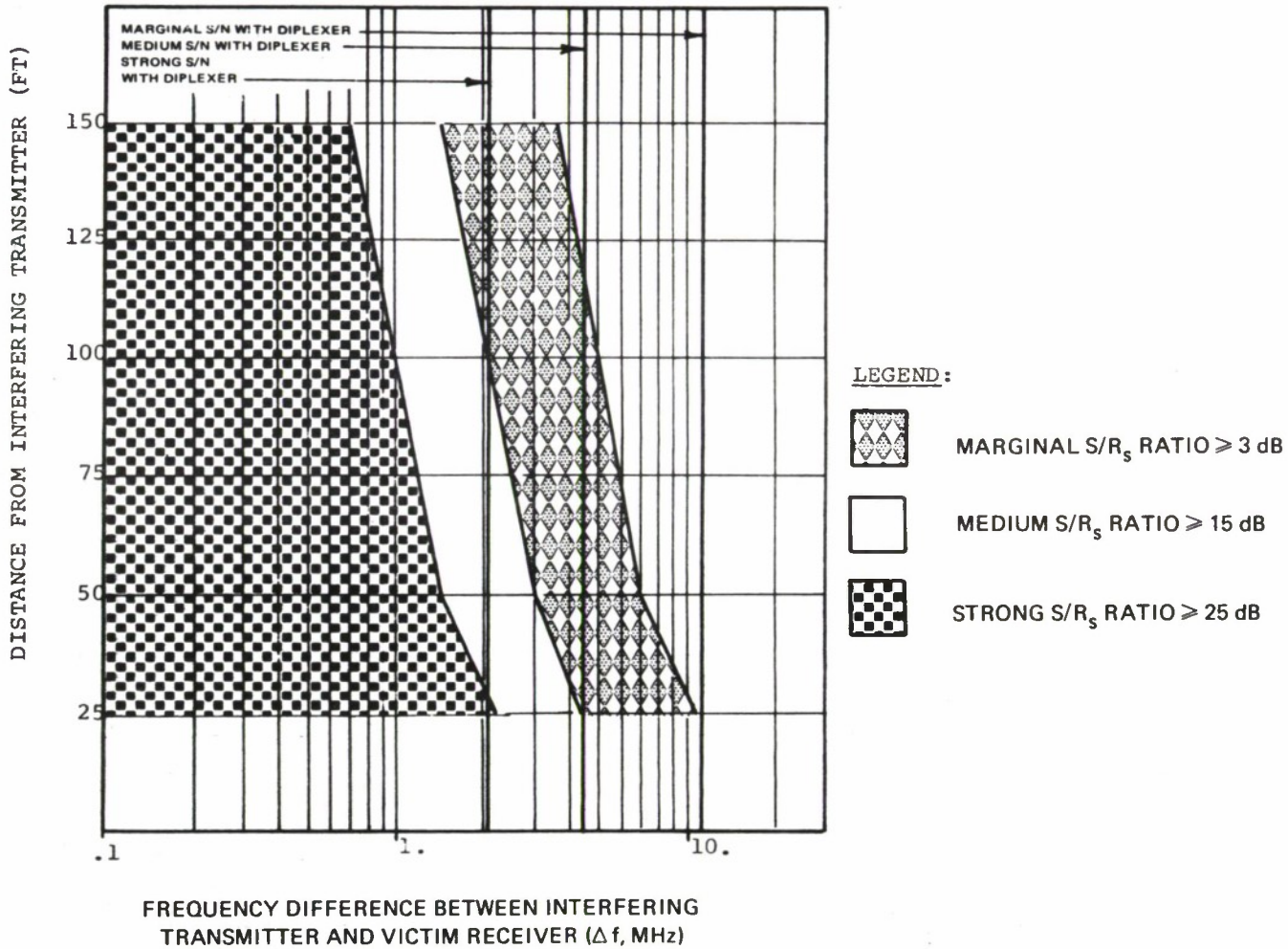


Figure III-23. F-D Curves for AN/MRC-135, High Band, Horizontally Polarized LPA

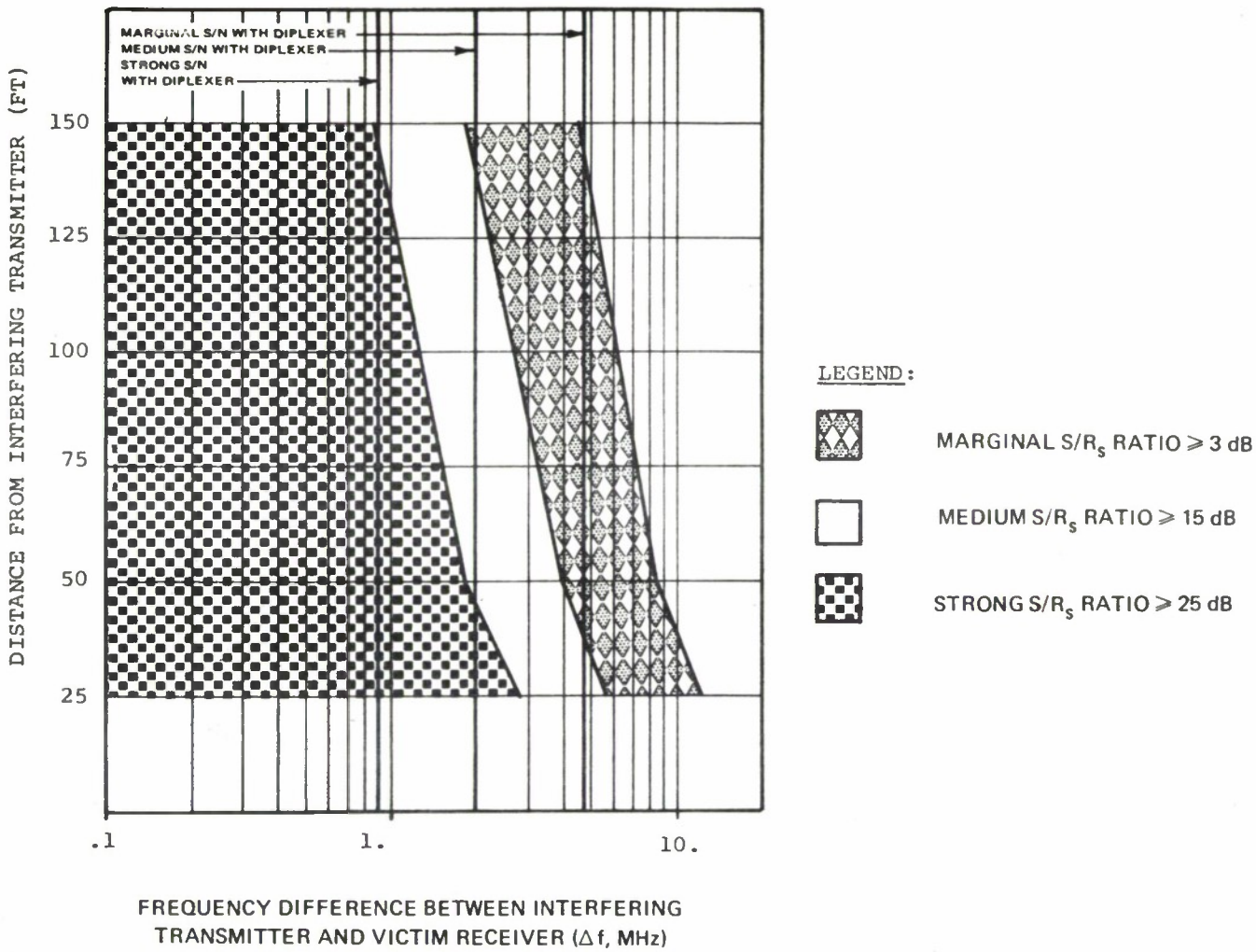


Figure III-24. F-D Curves for AN/MRC-135, Low Band, Vertically Polarized LPA

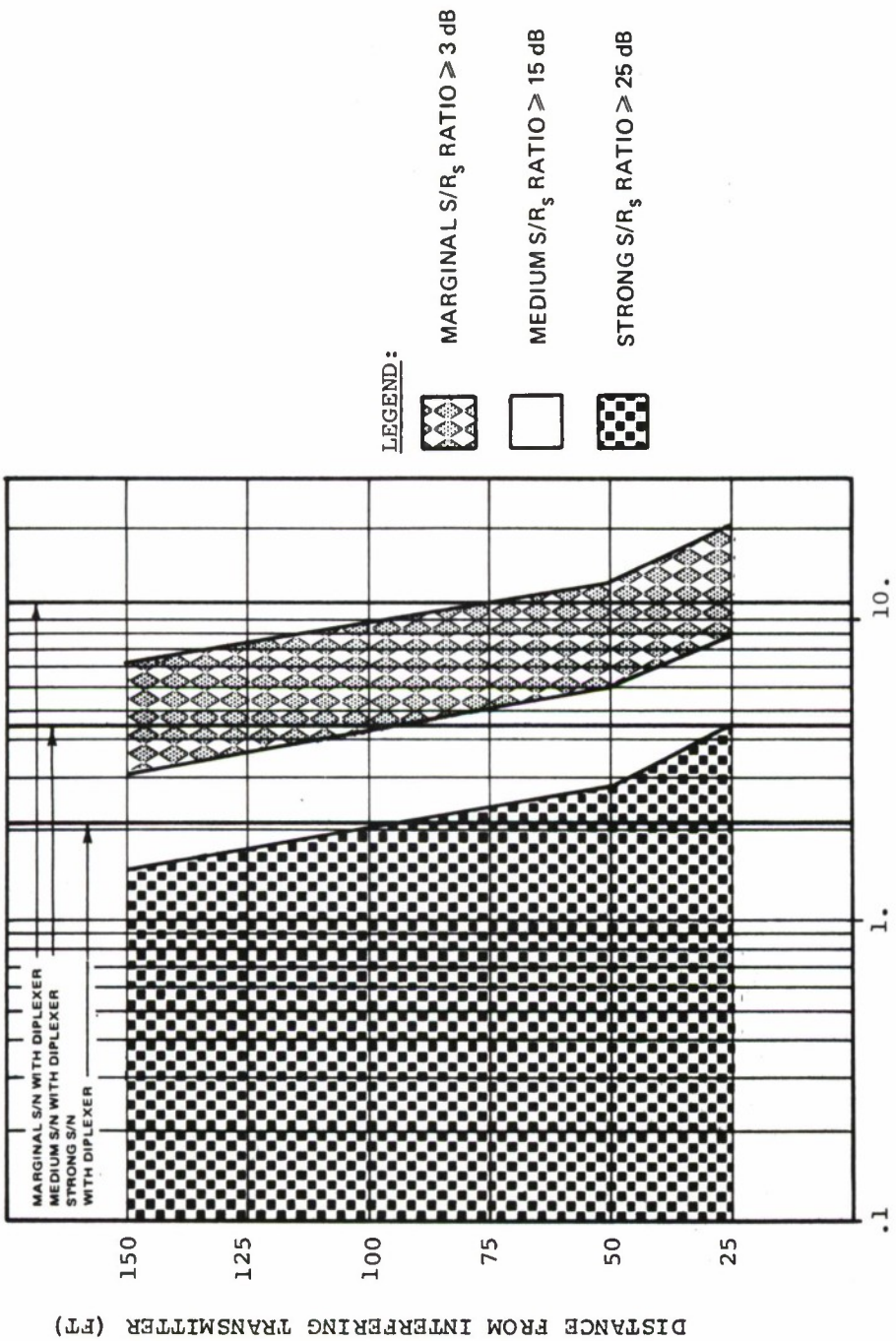


Figure III-25. F-D Curves for AN/MRC-135, High Band, Vertically Polarized LPA

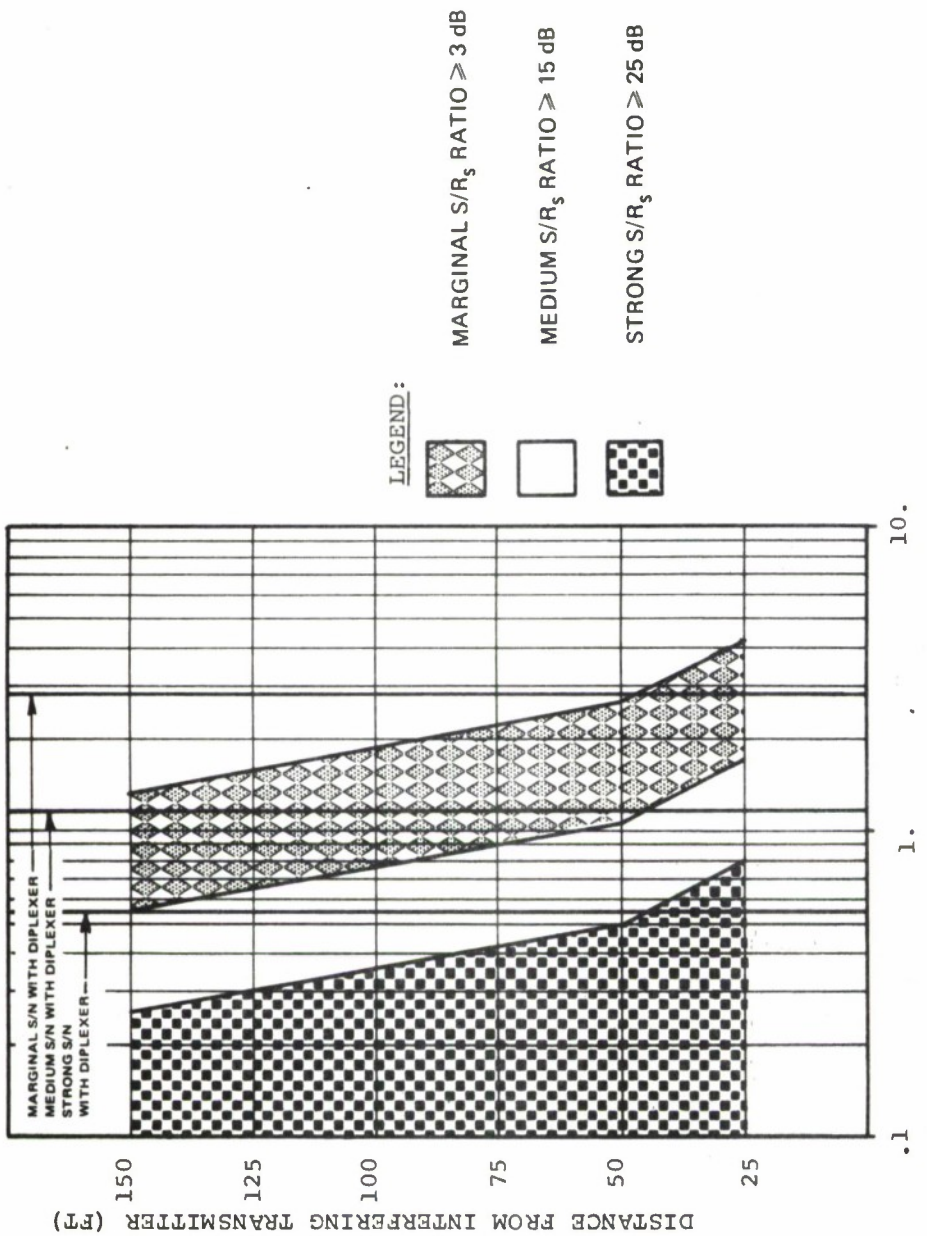


Figure III-26. F-D Curves for AN/MRC-134, Low Band, Horizontally Polarized LPA

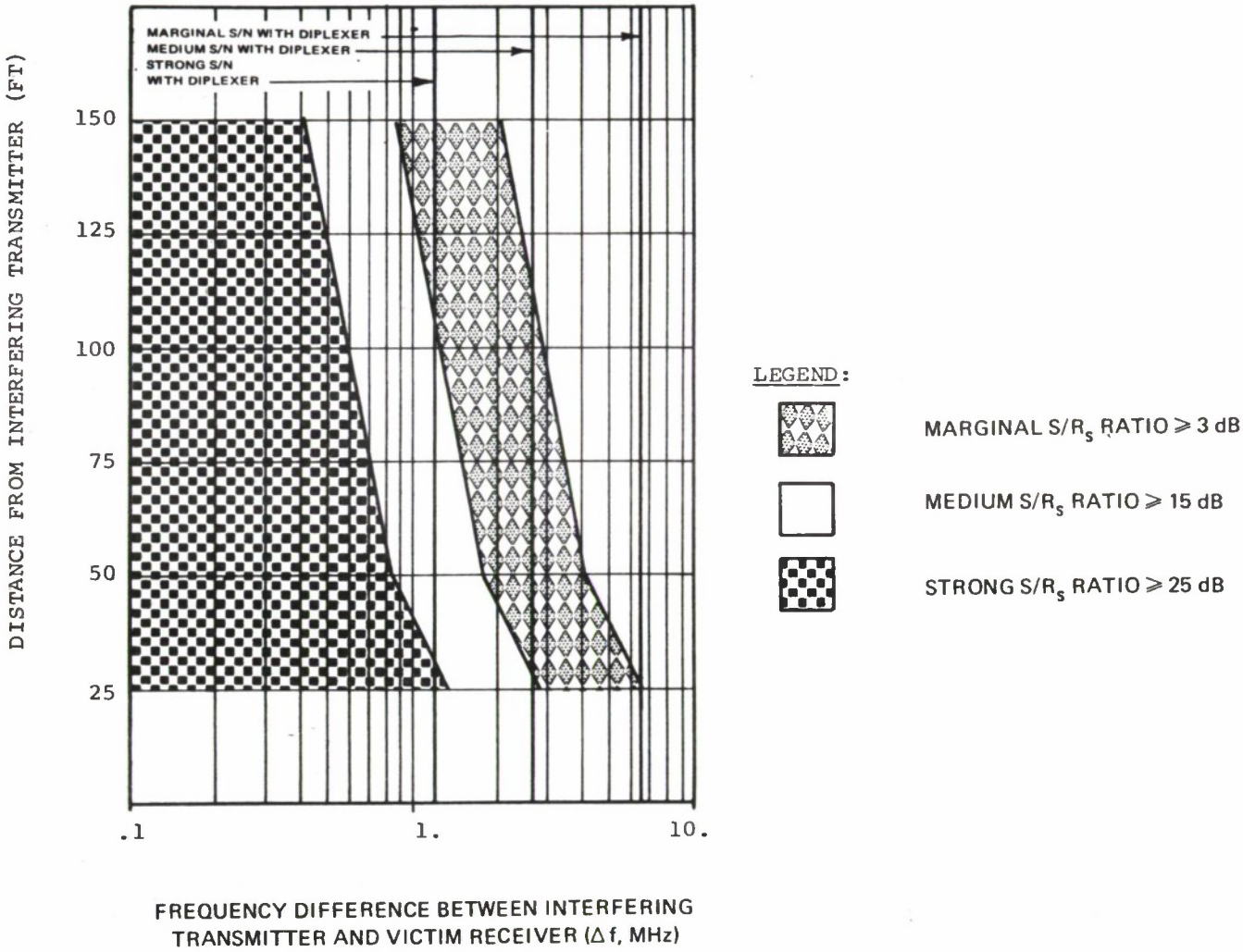


Figure III-27. F-D Curves for AN/MRC-134, High Band, Horizontally Polarized LPA

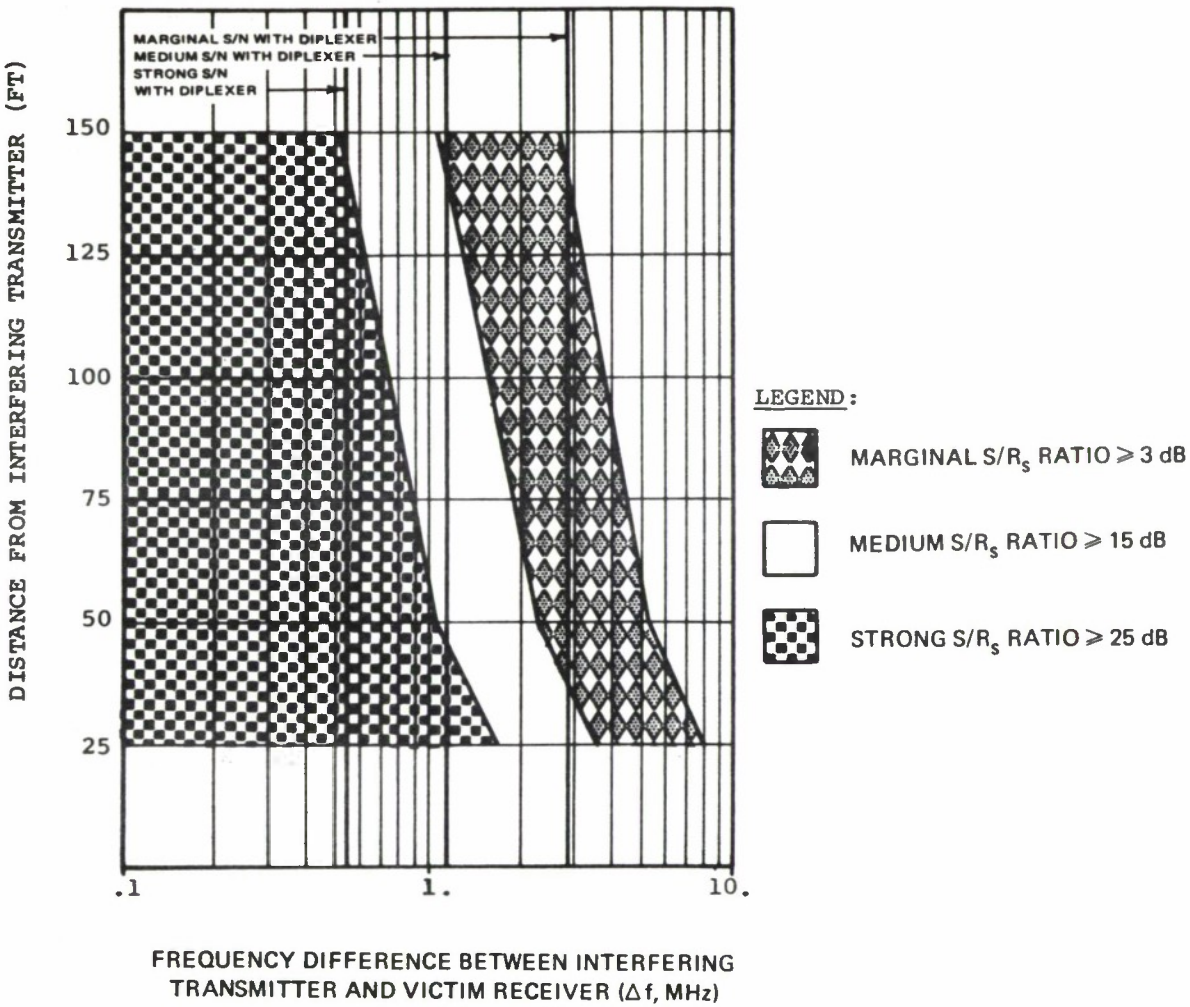


Figure III-28. F-D Curves for AN/MRC-134, Low Band, Vertically Polarized LPA

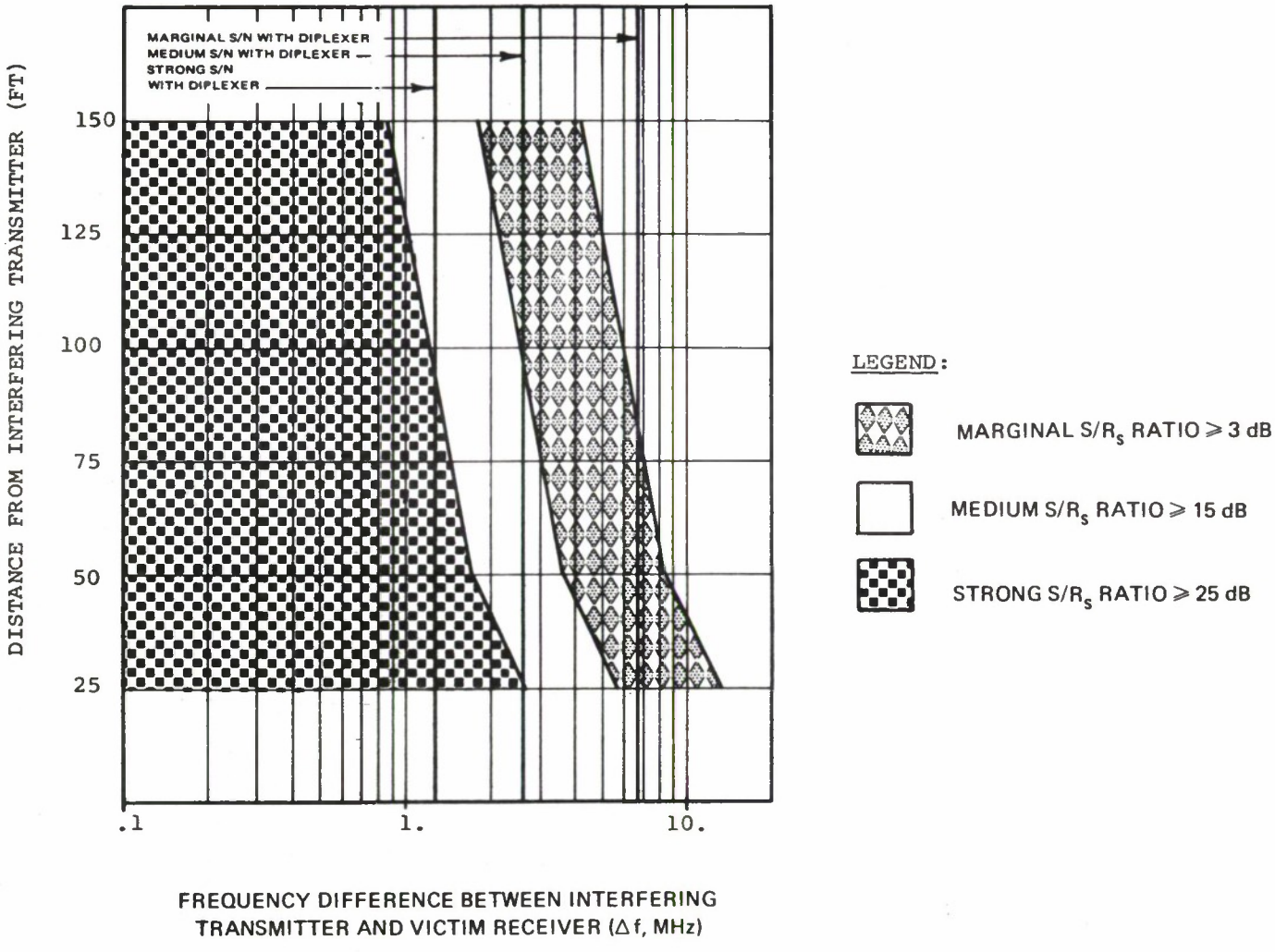


Figure III-29. F-D Curves for AN/MRC-134, High Band, Vertically Polarized LPA

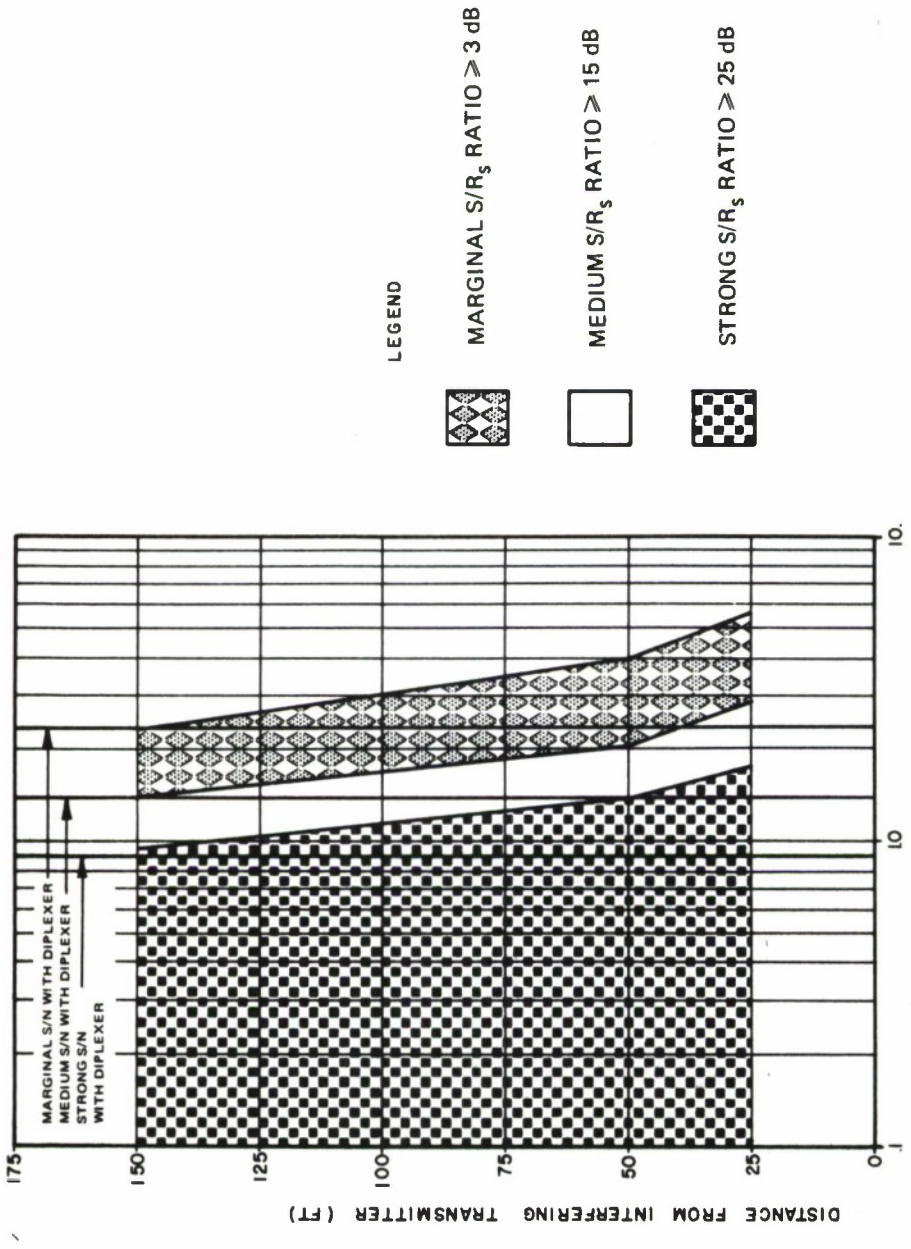


Figure III-30. F-D Curves for AN/TRC-166, Low Band, Vertical 10' Whip

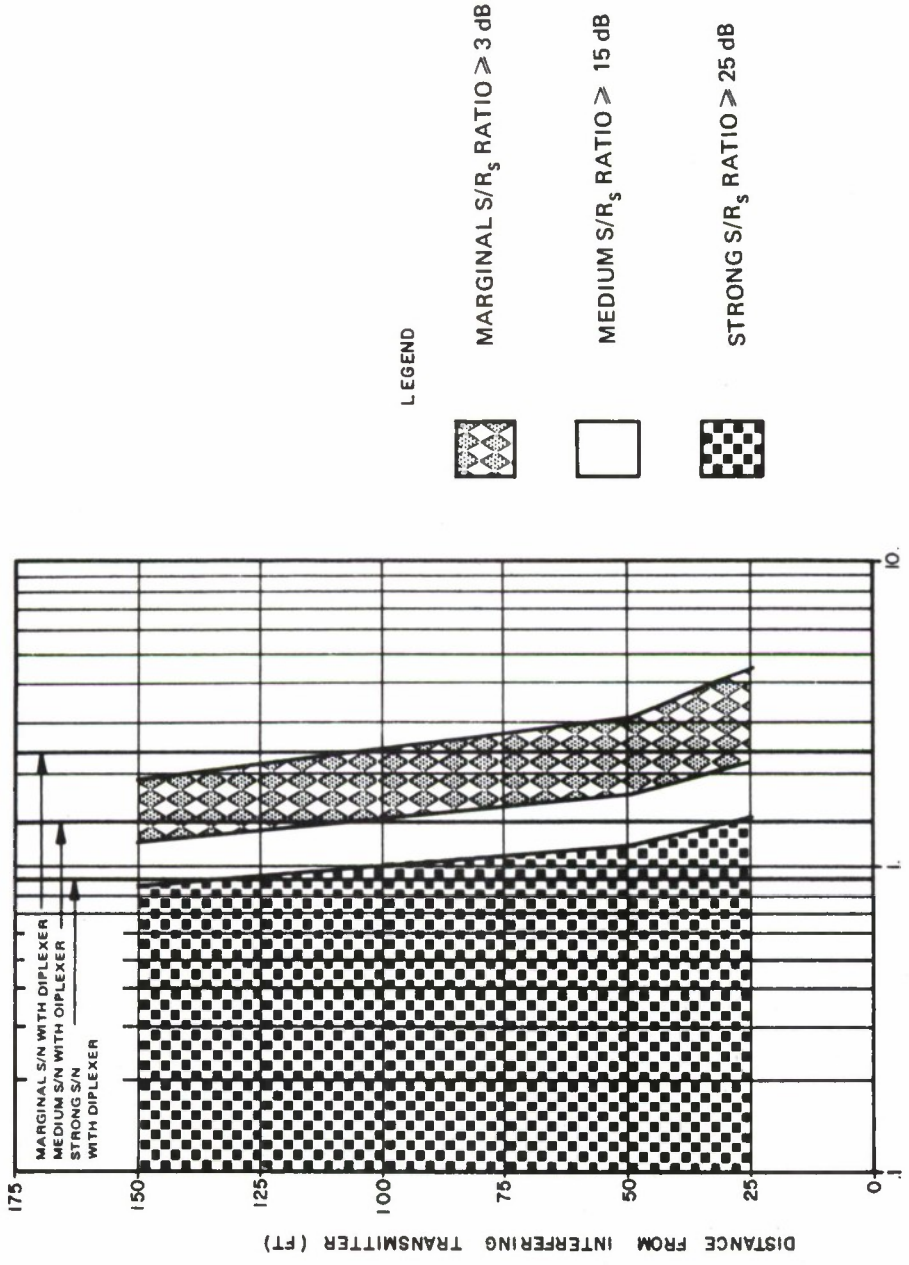


Figure III-31. F-D Curves for AN/TRC-166, High Band, Vertical 10' Whip

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DOCUMENT CONTROL DATA - R & D

(Security classification of title, body of abstract and indexing annotation must be entered when the overall report is classified)

1. ORIGINATING ACTIVITY (Corporate author)	2a. REPORT SECURITY CLASSIFICATION
Electromagnetic Compatibility Analysis Center	UNCLASSIFIED
	2b. GROUP

3. REPORT TITLE

VHF-FM MULTICHANNEL EQUIPMENT SITING CONSIDERATIONS

4. DESCRIPTIVE NOTES (Type of report and inclusive dates)

Technical Report

5. AUTHOR(S) (First name, middle initial, last name)

T. Lesniakowski

6. REPORT DATE	7a. TOTAL NO. OF PAGES	7b. NO. OF REFS
April 1972	112	12

8a. CONTRACT OR GRANT NO.	9a. ORIGINATOR'S REPORT NUMBER(S)
F-19628-71-C-0221	
b. PROJECT NO. 649 E	ESD-TR-72-011
c.	9b. OTHER REPORT NO(S) (Any other numbers that may be assigned this report)
d.	

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13. ABSTRACT

Two Marine Corps VHF-FM radio equipments are analyzed to determine the constraints to be placed on their use when tactically deployed. The equipments are the AN/TRC-166, (AN/PRC-25 Manpack Radio with the AN/PCC-1 four-channel multiplex Telegraph-Telephone Terminal Set), and the AN/MRC-109 Vehicle-Mounted Radio Set with either the four-channel AN/VCC-1 (AN/MRC-134) or the eight-channel AN/VCC-2 (AN/MRC-135) multiplex Telegraph-Telephone Terminal Sets. Procedures that incorporate knowledge of terrain, path loss and frequency-distance separation criteria, are developed to assist communicators in the selection of frequencies for operation of AN/MRC-134/135 and AN/TRC-166 VHF-FM radios in the field.

14. KEY WOROS	LINK A		LINK B		LINK C	
	ROLE	WT	ROLE	WT	ROLE	WT
FM						
VHF						
AN/PCC-1						
AN/PRC-25						
AN/TRC-166						
AN/MRC-109						
AN/MRC-134						
AN/MRC-135						
EQUIPMENTS						

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