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Johnson-Gierhart Program Predictions of Excess Propagation Loss  
for Super-High Frequency Air-to-Ground Paths  
Volume 2: Appendices

**AD-A267 021**



By

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June 1993

Prepared for  
Program Manager  
CDSM Program  
Electronic Systems Center  
Air Force Materiel Command  
United States Air Force  
Hanscom Air Force Base, Massachusetts



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**93-16495**



Project No. 5010

Prepared by

The MITRE Corporation  
Bedford, Massachusetts

Contract No. F19628-89-C-0001

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FOR THE COMMANDER



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ROBERT E. WILSON, Major, USAF  
Program Manager, CDSM Program

# REPORT DOCUMENTATION PAGE

Form Approved  
OMB No 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.

<b>1. AGENCY USE ONLY (Leave blank)</b>		<b>2. REPORT DATE</b> June 1993	<b>3. REPORT TYPE AND DATES COVERED</b> Final	
<b>4. TITLE AND SUBTITLE</b> Johnson-Gierhart Program Predictions of Excess Propagation Loss for Super-High Frequency Air-to-Ground Paths Volume 2: Appendices			<b>5. FUNDING NUMBERS</b> F19628-89-C-0001 5010	
<b>6. AUTHOR(S)</b> Weiner, Melvin M. Herther, John C.				
<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> The MITRE Corporation 202 Burlington Road Bedford, MA 01730-1420			<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b> MTR 92B0000027V2	
<b>9. SPONSORING / MONITORING AGENCY NAME(S) AND ADDRESS(ES)</b> Program Manager, CDSM Program Electronic Systems Center, AFMC Hanscom AFB, MA 01731-5000			<b>10. SPONSORING / MONITORING AGENCY REPORT NUMBER</b> (ESC/ICR) ESC-TR-93-161(II)	
<b>11. SUPPLEMENTARY NOTES</b>				
<b>12a. DISTRIBUTION AVAILABILITY STATEMENT</b> Approved for public release; distribution unlimited.			<b>12b. DISTRIBUTION CODE</b>	
<b>13. ABSTRACT (Maximum 200 words)</b>  The Johnson-Gierhart tropospheric propagation program of the Institute for Telecommunications Sciences is used to obtain predictions of excess propagation loss over that of free space for super-high frequency (SHF) air-to-ground paths within or on the radio horizon. The principal loss (gain) mechanisms considered are atmospheric absorption and refraction, surface multipath interference, smooth spherical Earth diffraction, and single knife-edge diffraction caused by terrain roughness and/or a site-specified obstacle. The program uses a semi-empirical database to statistically weigh the losses from these mechanisms. The excess propagation loss increases with increasing range and can exceed 3 decibels at distances as close as halfway to the radio horizon.				
<b>14. SUBJECT TERMS</b> Probability of Prediction Propagation Rough Terrain			<b>15. NUMBER OF PAGES</b> 221	
			<b>16. PRICE CODE</b>	
<b>17. SECURITY CLASSIFICATION OF REPORT</b> Unclassified	<b>18. SECURITY CLASSIFICATION OF THIS PAGE</b> Unclassified	<b>19. SECURITY CLASSIFICATION OF ABSTRACT</b> Unclassified	<b>20. LIMITATION OF ABSTRACT</b> SAR	

## EXECUTIVE SUMMARY

### BACKGROUND

Free-space propagation is often assumed in the design of super-high frequency air-to-ground communication and radar systems with operating ranges within or on the radiohorizon. This report demonstrates the inadequacy of this simplistic approach. Real-world propagation losses, quantified with the aid of an established propagation model, are presented as a function of altitude and range.

### PURPOSE

A detailed discussion of the Johnson-Gierhart propagation program and its application to the estimation of propagation loss is presented. Various aircraft altitude and transmission ranges are compared. Environmental factors considered are climate, terrain roughness, and site-specified horizon limiting obstacles.

### CONCLUSIONS

Free-space modeling of transmission loss of air-to-ground paths provides an adequate approximation for the combination of sufficiently short paths with sufficiently high altitudes of the air platform. For paths exceeding 75 nautical miles with air platforms below 20,000 feet, propagation losses in excess of free space cannot be ignored without jeopardizing the system design. The propagation loss distribution is shown to be log-normal for most of the scenarios of interest. Log-normally distributed propagation loss yields probabilities of detection that can be appreciably less than those predicted for signals with free-space propagation loss.

## IMPLICATIONS

Statistical/semi-empirical propagation models, though not rigorously proven, remain useful tools with which to estimate performance because they are derived from a substantial database obtained from dedicated experiments over a period of years. The theory of probability of detection with log-normal statistics is maturing. The application of this theory to the design of long-range electronic systems should be the topic of a follow-on study.

## ACKNOWLEDGMENTS

This document has been prepared by the MITRE Corporation under Project No. 5010, Contract No. F19628-89-C-0001. The contract is sponsored by the Electronic Systems Center, Air Force Materiel Command, United States Air Force, Hanscom Air Force Base, Massachusetts 01731-5000.

The investigation of excess propagation loss for the air-to-ground paths of this paper was suggested by James Lemon. Hilda Chow performed the initial Johnson-Gierhart computer program runs that showed the potentially large excess propagation loss over free space increasing as a function of range. Dima Seliverstov and Louis Gnerre performed additional runs for the variety of parameters analyzed. Nicholas Senio provided technical assistance and insight regarding atmospheric losses. Raul Blanche and Major Robert Wilson provided invaluable support in pursuing this investigation. Sandra Kurniel and Donna Silva typed the document, and Angeline Theodore provided editorial assistance.

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Availability Codes	
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## APPENDIX A

### PROBABILITY $P[X \geq 0]$ FOR A NORMALLY-DISTRIBUTED RANDOM VARIABLE $X$

Let  $X$  be a normally-distributed random variable with an expected value  $\langle X \rangle = m_x$ , standard deviation  $\sigma_x$ , and probability density function  $f_x(x)$  given by

$$f_x(x) = \frac{1}{\sqrt{2\pi}} \frac{1}{\sigma_x} \exp\left[-\frac{(x - m_x)^2}{2\sigma_x^2}\right] \quad (\text{A.1})$$

which is plotted in figure A-1. The probability  $P[X \geq 0]$  is the shaded area in figure A-1 and is given by

$$P[X \geq 0] = F_x(\infty) - F_x(0) = 1 - F_x(0) \quad (\text{A.2})$$

$$= 1 - \frac{1}{\sqrt{2\pi}} \frac{1}{\sigma_x} \int_{-\infty}^0 \exp\left[-\frac{(x - m_x)^2}{2\sigma_x^2}\right] dx$$

where

$$\begin{aligned} F_x(x) &= \int_{-\infty}^x f_x(t) dt \\ &= \text{cumulative distribution function of the random variable } X \end{aligned}$$

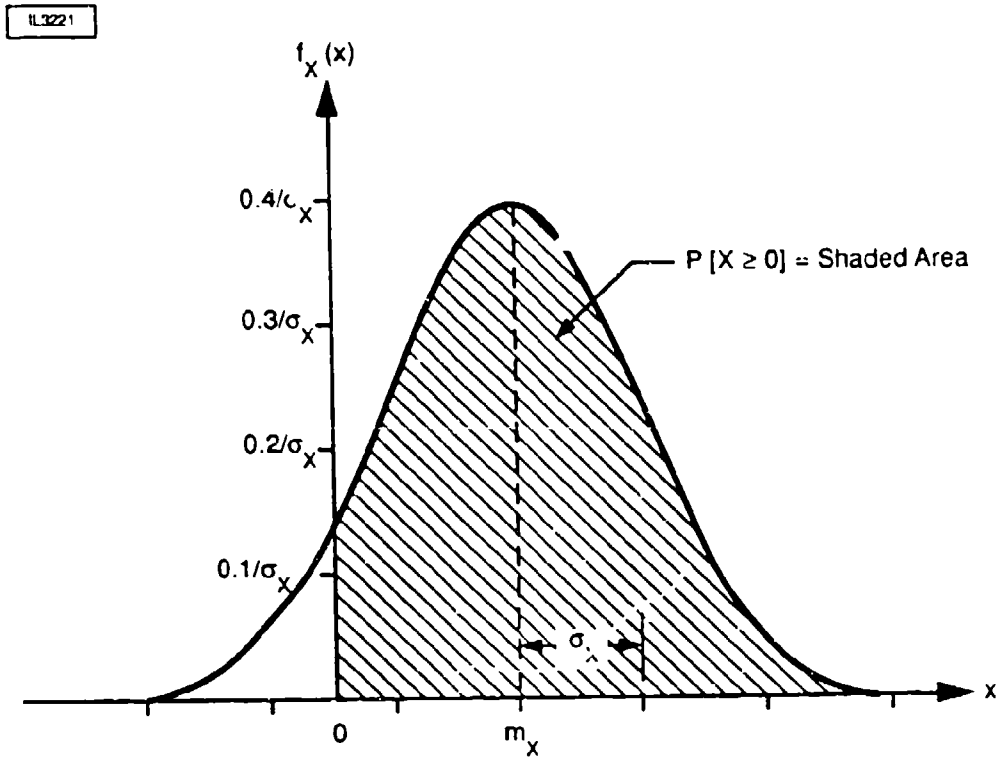


Figure A-1. Normally Distributed Probability Density Function with Mean  $m_x$  and Standard Deviation  $\sigma_x$

It should be noted from figure A-1 that

$$P\{X \geq 0\} = \begin{cases} \frac{1}{2}, & m_x = 0 \\ \frac{1}{2} \leq P\{X \geq 0\} \leq 1, & m_x \geq 0 \\ 0 \leq P\{X \geq 0\} \leq \frac{1}{2}, & m_x \leq 0 \end{cases} \quad (\text{A.3})$$

Defining the zero-mean, normally-distributed random variable

$$Z = \frac{X - m_x}{\sigma_x} \quad (\text{A.4})$$

and substituting into equation A.2

$$\begin{aligned} P\{X \geq 0\} &= 1 - (1/\sqrt{2\pi}) \int_{-\infty}^{-m_x/\sigma_x} \exp(-z^2/2) dz \\ &= 1 - F_z(-m_x/\sigma_x) = 1 - [1 - F_z(m_x/\sigma_x)] \\ &= F_z(m_x/\sigma_x) = (1/\sqrt{2\pi}) \int_{-\infty}^{m_x/\sigma_x} \exp(-z^2/2) dz \end{aligned} \quad (\text{A.5})$$

The cumulative distribution function  $F_z(m_x/\sigma_x)$  of the normally-distributed random variable  $Z$  with quantile  $z = m_x/\sigma_x$  is a straight line when plotted on normal probability paper.

An alternative expression for  $P[X \geq 0]$  may be obtained by substituting  $t = z/\sqrt{2}$  into equation A.5 and by noting that  $F_z(0) = \frac{1}{2}$ . Accordingly,

$$\begin{aligned} P[X \geq 0] &= \frac{1}{2} + \frac{1}{\sqrt{\pi}} \int_0^{m_x/\sqrt{2}\sigma_x} \exp(-t^2) dt \\ &= \frac{1}{2} [1 + \operatorname{erf}(m_x/\sqrt{2}\sigma_x)] \end{aligned} \tag{A.6}$$

where

$$\operatorname{erf}(s) \equiv (2/\sqrt{\pi}) \int_0^s \exp(-t^2) dt = \text{error function of } s \text{ (reference 32 of volume 1)}$$

## APPENDIX B

### PROBABILITY $P[X \geq 0]$ FOR A TWO-PIECEWISE NORMALLY-DISTRIBUTED RANDOM VARIABLE $X$

Let  $X$  be a two-piecewise normally-distributed random variable with a breakpoint at the value  $x_0$  and a probability density function  $f_x(x)$  (see figure B-1) given by

$$f_x(x) = \begin{cases} (1/A)f_{x_1}(x), & x \leq x_0 \\ (1/A)f_{x_2}(x), & x > x_0 \end{cases}, f_{x_1}(0) \geq f_{x_2}(0), \quad -\infty \leq x \leq \infty \quad (\text{B.1})$$

where

$$f_{x_1}(x) = \frac{1}{\sqrt{2\pi}} \frac{1}{\sigma_{x_1}} \exp\left[-\frac{(x - m_{x_1})^2}{2\sigma_{x_1}^2}\right], \quad -\infty \leq x \leq \infty$$

$$f_{x_2}(x) = \frac{1}{\sqrt{2\pi}} \frac{1}{\sigma_{x_2}} \exp\left[-\frac{(x - m_{x_2})^2}{2\sigma_{x_2}^2}\right], \quad -\infty \leq x \leq \infty$$

$$A = 1 + F_{x_1}(x_0) - F_{x_2}(x_0) = F_{x_1}(x_0) + F_{x_2}(-x_0) = \text{normalizing constant so that } F_x(\infty) = 1.$$

$$F_{x_1}(x) = \int_{-\infty}^x f_{x_1}(t) dt = \text{cumulative distribution function of the random variable } X_1.$$

$$F_{x_2}(x) = \int_{-\infty}^x f_{x_2}(t) dt = \text{cumulative distribution function of the random variable } X_2.$$

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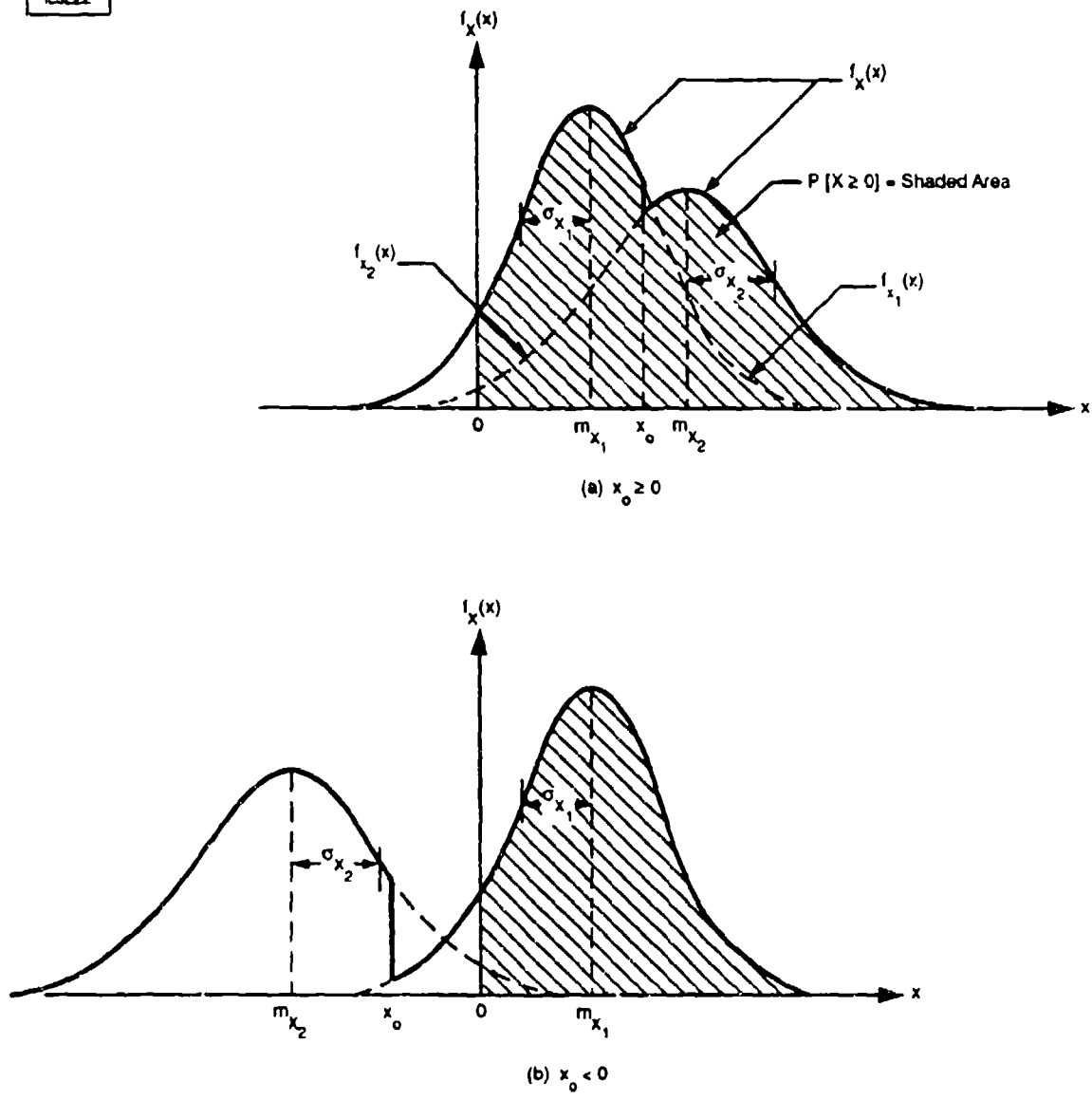


Figure B-1. Two-Piece Normal Probability Density Function of the Random Variable X with Breakpoint at the Value  $x_0$

$F_X(x) = \int_{-\infty}^x f_X(t)dt =$  cumulative distribution function of the random variable  $X$ .

$m_{x_1}, m_{x_2} =$  means (expected values) of  $f_{x_1}(x)$  and  $f_{x_2}(x)$ , respectively.

$\sigma_{x_1}, \sigma_{x_2} =$  standard deviations of  $f_{x_1}(x)$  and  $f_{x_2}(x)$ , respectively.

The probability  $P[X \geq 0]$  is the shaded area in figure A-1 and is given by

$$\begin{aligned} P[X \geq 0] &= F_X(\infty) - F_X(0) = 1 - F_X(0) \\ &= \begin{cases} 1 - (1/A)F_{x_1}(0), & x_0 \geq 0 \\ 1 - (1/A)[F_{x_1}(0) + F_{x_2}(x_0) - F_{x_1}(x_0)], & x_0 < 0 \end{cases} \end{aligned} \quad (B.2)$$

where  $A$ ,  $F_{x_1}(x)$ , and  $F_{x_2}(x)$  are defined in equation B.1.

Consider now the normally-distributed random variables  $Z_{i=1,2}$  of zero-mean and unit variance defined by

$$Z_i = (X_i - m_{x_i}) / \sigma_{x_i}; \quad i = 1, 2 \quad (B.3)$$

with values (quantiles)  $z_{i=1,2}$  given by

$$z_i = (x - m_{x_i}) / \sigma_{x_i}; \quad i = 1, 2 \quad (B.4)$$

Substituting equations B.3 and B.4 into equation B.1,

$$f_{X_i}(x) = (1/\sqrt{2\pi}) \int_{-\infty}^{z_i} \exp(-z_i^2/2) dz_i = f_{Z_i}(z_i), \quad i = 1, 2 \quad (\text{B.5})$$

$$F_{X_i}(x) = \int_{-\infty}^{z_i} f_{Z_i} dt = F_{Z_i}(z_i), \quad i = 1, 2 \quad (\text{B.6})$$

Substituting equation (B.6) into equation (B.2),

$$P[X \geq 0] = 1 - (1/A) F_{Z_1}(-m_{X_1}/\sigma_{X_1}), \quad x_o \geq 0 \quad (\text{B.7})$$

$$P[X \geq 0] = 1 - \frac{1}{A} \left\{ F_{Z_1}\left(-\frac{m_{X_1}}{\sigma_{X_1}}\right) + F_{Z_2}\left(\frac{x_o - m_{X_2}}{\sigma_{X_2}}\right) - F_{Z_1}\left(\frac{x_o - m_{X_1}}{\sigma_{X_1}}\right) \right\}, \quad x_o < 0 \quad (\text{B.8})$$

where

$$A = F_{Z_1}\left[(x_o - m_{X_1})/\sigma_{X_1}\right] + F_{Z_2}\left[-(x_o - m_{X_2})/\sigma_{X_2}\right]$$

The cumulative distribution functions  $F_{Z_i}(z_i)$  of the normally-distributed random variables  $Z_{i=1,2}$  of zero mean, unit variance, and quantile  $z_i$  are identical straight lines when plotted on normal probability paper.



## APPENDIX C

### COMPUTER PRINTOUTS OF BASIC TRANSMISSION LOSS QUANTILES FOR DETERMINING CUMULATIVE DISTRIBUTION FUNCTIONS

This appendix contains the Johnson-Gierhart program printouts of the basic transmission loss quantiles that were used in constructing the cumulative distribution functions of tables 2-3 and 2-5 in section 2 of volume 1. The run numbers are identified below.

Volume 2	Reference in Volume 1				Volume 2
Run No.	Table	Figure	Case	Lobing	Page
1	2-3	2-3	a,b	Determines Median	C-2
2	2-3	2-3	c,d	Determines Median	C-4
3	2-3	2-3	e,f	Determines Median	C-6
4	2-5	2-4	a,b	Contributes to Variability	C-8
5	2-5	2-4	c,d	Contributes to Variability	C-9
6	2-5	2-4	e,f	Contributes to Variability	C-10



145.40	161.06	169.76	169.46	160.21	161.03	162.83	164.61	166.13	167.72	169.35	173.12	174.22	166.82	5.40	81.54
146.00	161.16	169.78	169.48	160.26	161.08	162.84	164.66	166.20	167.84	169.48	173.24	174.34	166.86	5.44	81.76
147.82	161.16	169.84	169.56	160.31	161.16	162.85	164.72	166.28	167.98	169.64	173.26	174.36	166.88	5.48	82.00
149.65	161.32	169.85	169.55	160.41	161.26	162.87	164.82	166.34	168.08	169.74	173.28	174.38	166.90	5.52	82.24
150.89	161.39	169.89	169.59	160.46	161.30	162.89	164.86	166.38	168.12	169.78	173.30	174.40	166.92	5.56	82.48
152.20	161.46	169.92	169.62	160.48	161.32	162.90	164.88	166.40	168.14	169.80	173.32	174.42	166.94	5.60	82.72
154.68	161.59	169.93	169.63	160.55	161.41	162.91	164.91	166.46	168.19	169.82	173.34	174.44	166.96	5.64	82.96
155.98	161.67	169.95	169.65	160.60	161.50	162.92	164.93	166.48	168.21	169.84	173.36	174.46	166.98	5.68	83.20
160.84	161.72	169.96	169.66	160.62	161.54	162.93	164.95	166.50	168.23	169.86	173.38	174.48	167.00	5.72	83.44
168.41	161.86	169.98	169.68	160.64	161.58	162.94	164.97	166.52	168.25	169.88	173.40	174.50	167.02	5.76	83.68
161.00	161.95	169.99	169.69	160.66	161.64	162.95	164.99	166.54	168.27	169.90	173.42	174.52	167.04	5.80	83.92
161.92	161.99	169.99	169.69	160.68	161.68	162.96	165.01	166.56	168.29	169.92	173.44	174.54	167.06	5.84	84.16
164.49	162.13	169.99	169.69	160.73	161.73	162.97	165.03	166.58	168.31	169.94	173.46	174.56	167.08	5.88	84.40
166.00	162.21	169.99	169.69	160.75	161.77	162.98	165.05	166.60	168.33	169.96	173.48	174.58	167.10	5.92	84.64
167.14	162.27	169.99	169.69	160.78	161.82	162.99	165.07	166.62	168.35	169.98	173.50	174.60	167.12	5.96	84.88
168.90	162.41	169.99	169.69	160.80	161.86	162.99	165.09	166.64	168.37	169.98	173.52	174.62	167.14	6.00	85.12
171.00	162.47	169.99	169.69	160.85	161.90	162.99	165.11	166.66	168.39	169.98	173.54	174.64	167.16	6.04	85.36
172.33	162.66	169.99	169.69	160.87	161.94	162.99	165.13	166.68	168.41	169.98	173.56	174.66	167.18	6.08	85.60
174.87	162.82	169.99	169.69	160.91	161.98	162.99	165.15	166.70	168.43	169.98	173.58	174.68	167.20	6.12	85.84
176.00	162.72	169.99	169.69	160.93	162.02	162.99	165.17	166.72	168.45	169.98	173.60	174.70	167.22	6.16	86.08
178.16	162.78	169.99	169.69	160.95	162.06	162.99	165.19	166.74	168.47	169.98	173.62	174.72	167.24	6.20	86.32
179.82	162.78	169.99	169.69	160.97	162.10	162.99	165.21	166.76	168.49	169.98	173.64	174.74	167.26	6.24	86.56
177.47	162.78	169.99	169.69	160.99	162.14	162.99	165.23	166.78	168.51	169.98	173.66	174.76	167.28	6.28	86.80
177.89	162.81	169.99	169.69	161.01	162.18	162.99	165.25	166.80	168.53	169.98	173.68	174.78	167.30	6.32	87.04
178.22	162.83	169.99	169.69	161.03	162.22	162.99	165.27	166.82	168.55	169.98	173.70	174.80	167.32	6.36	87.28
178.46	162.84	169.99	169.69	161.05	162.26	162.99	165.29	166.84	168.57	169.98	173.72	174.82	167.34	6.40	87.52
178.48	162.84	169.99	169.69	161.06	162.28	162.99	165.30	166.86	168.58	169.98	173.74	174.84	167.36	6.44	87.76
179.82	162.88	169.99	169.69	161.08	162.32	162.99	165.32	166.88	168.60	169.98	173.76	174.86	167.38	6.48	88.00
179.82	162.88	169.99	169.69	161.09	162.34	162.99	165.34	166.90	168.62	169.98	173.78	174.88	167.40	6.52	88.24
181.00	162.91	169.99	169.69	161.11	162.38	162.99	165.36	166.92	168.64	169.98	173.80	174.90	167.42	6.56	88.48
182.02	162.96	169.99	169.69	161.13	162.42	162.99	165.38	166.94	168.66	169.98	173.82	174.92	167.44	6.60	88.72
186.00	163.15	169.99	169.69	161.15	162.46	162.99	165.40	166.96	168.68	169.98	173.84	174.94	167.46	6.64	88.96
186.00	163.26	169.99	169.69	161.17	162.50	162.99	165.42	166.98	168.70	169.98	173.86	174.96	167.48	6.68	89.20
187.00	163.24	169.99	169.69	161.19	162.54	162.99	165.44	167.00	168.72	169.98	173.88	174.98	167.50	6.72	89.44
188.00	163.29	169.99	169.69	161.21	162.58	162.99	165.46	167.02	168.74	169.98	173.90	175.00	167.52	6.76	89.68
189.00	163.34	169.99	169.69	161.23	162.62	162.99	165.48	167.04	168.76	169.98	173.92	175.02	167.54	6.80	89.92
189.00	163.38	169.99	169.69	161.25	162.66	162.99	165.50	167.06	168.78	169.98	173.94	175.04	167.56	6.84	90.16

SURFACE REFLECTION LOSS, DETERMINED BY MEDIAN

SURFACE TYPE, ROOF, GROUND, CLIMATE, DESERT

JOHNSON & GUERHART CLIMATIC DISTRIBUTION DATA  
TERRAIN DATA: h = 50 FT  
TYPE: BIOTROPIC POLARIZATION: CIRCULAR  
TYPE: BIOTROPIC POLARIZATION: CIRCULAR  
MINIMUM MONTHLY MEAN: 200 N UNITS

FREQUENCY: 10 GHz  
HEIGHT: 3000 FT ABOVE MSL  
ANTENNA: ANTENNA HEIGHT: 20 FT ABOVE MSL  
REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4425 NM

TIME AVAILABILITY FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

D (M)	FREE SPACE	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	EXP VALUE	STD DEV	EFF DIST
1.00	112.84	132.61	132.55	132.50	132.64	132.67	132.70	132.73	132.78	132.80	132.85	132.90	132.70	0.12	0.30
6.47	136.70	136.64	136.64	136.68	136.72	136.78	136.81	136.82	136.86	136.89	136.94	136.98	136.79	0.12	1.64
9.37	138.60	138.43	138.47	138.52	138.56	138.59	138.62	138.65	138.69	138.72	138.75	138.82	138.62	0.12	2.77
16.27	142.00	141.95	142.03	142.06	142.12	142.15	142.21	142.23	142.26	142.31	142.34	142.38	142.18	0.12	4.52
18.75	143.62	143.65	143.68	143.74	143.78	143.81	143.84	143.87	143.94	143.94	143.99	144.04	143.84	0.12	5.55
24.04	146.66	146.74	146.78	146.83	146.87	146.90	146.94	146.98	147.04	147.04	147.08	147.12	146.94	0.12	7.12
34.04	147.70	147.86	147.91	147.96	147.99	148.03	148.06	148.09	148.14	148.16	148.21	148.25	148.06	0.12	9.10
36.94	148.02	148.25	148.28	148.34	148.38	148.41	148.44	148.47	148.50	148.54	148.59	148.64	148.44	0.12	10.84
40.96	153.14	150.43	150.47	150.52	150.56	150.61	150.62	150.65	150.68	150.72	150.82	150.82	150.62	0.12	12.13
45.84	151.10	151.48	151.49	151.54	151.58	151.61	151.64	151.67	151.74	151.74	151.79	151.84	151.64	0.12	13.67
60.69	151.88	152.37	152.41	152.47	152.50	152.53	152.56	152.60	152.63	152.67	152.72	152.77	152.57	0.12	15.00
65.99	152.81	153.30	153.34	153.39	153.43	153.46	153.49	153.52	153.55	153.59	153.65	153.68	153.48	0.12	16.87
80.80	153.48	154.02	154.07	154.12	154.16	154.22	154.26	154.28	154.32	154.34	154.38	154.42	154.22	0.12	17.91
85.74	154.20	154.81	154.86	154.91	154.96	154.94	154.98	155.04	155.07	155.11	155.22	155.22	155.01	0.12	18.48
70.82	154.34	155.82	155.87	155.92	155.94	155.98	156.02	156.04	156.07	156.13	156.19	156.25	156.04	0.12	20.94
75.82	155.44	156.19	156.24	156.30	156.34	156.37	156.40	156.44	156.47	156.52	156.59	156.64	156.41	0.12	22.67
80.77	155.97	156.79	156.84	156.90	156.94	156.94	156.98	157.01	157.06	157.11	157.19	157.26	157.02	0.12	23.91
90.99	155.80	157.34	157.44	157.50	157.54	157.58	157.63	157.66	157.71	157.78	157.82	157.88	157.63	0.12	25.62
95.96	157.47	158.42	158.46	158.50	158.54	158.58	158.61	158.64	158.68	158.74	158.83	158.84	158.57	0.12	28.84
100.64	158.30	159.55	159.60	159.64	159.68	159.71	159.74	159.77	159.81	159.86	159.94	159.97	159.71	0.12	29.78
110.88	158.72	159.81	159.85	159.89	159.93	159.96	160.00	160.03	160.06	160.10	160.16	160.21	160.01	0.12	31.27
116.82	159.47	157.37	158.28	158.52	158.63	158.70	158.76	158.81	158.87	158.93	159.01	159.07	158.82	0.12	32.85
121.60	158.87	157.37	158.28	158.52	158.63	158.70	158.76	158.81	158.87	158.93	159.01	159.07	158.82	0.12	35.81
126.82	158.87	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	37.27
129.88	160.07	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.34
131.01	160.16	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
132.49	160.26	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
134.00	160.36	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
136.00	160.46	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
137.01	160.56	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
138.66	160.66	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
140.29	160.76	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
141.00	160.80	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
141.92	160.86	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
143.69	160.96	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
145.26	161.06	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
146.00	161.10	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
146.99	161.24	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
148.74	161.39	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
150.61	161.57	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
152.00	161.67	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
154.15	161.81	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
156.00	161.98	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
158.00	162.10	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
160.76	162.20	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
165.76	162.32	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
168.00	162.42	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
168.81	162.51	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
169.89	162.62	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44
169.89	162.62	158.60	158.41	158.22	158.04	157.87	157.71	157.56	157.41	157.26	157.11	156.97	156.82	0.12	38.44

171.00	182.47	180.43	181.63	181.74	182.32	183.83	185.63	187.02	188.80	190.42	193.32	198.09	188.54	4.88	80.61
171.98	182.52	180.48	181.07	181.78	182.28	183.98	185.81	187.11	188.71	190.31	193.42	198.28	188.65	4.91	80.90
174.14	182.57	180.53	181.12	181.83	182.33	184.03	185.86	187.25	188.85	190.45	193.57	198.43	188.76	5.03	81.64
174.80	182.72	180.58	181.17	181.88	182.38	184.08	185.91	187.30	188.90	190.50	193.62	198.54	188.87	5.13	82.09
178.21	182.74	180.60	181.22	181.93	182.43	184.10	185.93	187.32	188.92	190.52	193.64	198.56	188.89	5.14	82.18
178.52	182.85	180.61	181.25	181.96	182.46	184.12	185.95	187.34	188.94	190.54	193.66	198.58	188.91	5.28	82.44
180.78	182.85	180.62	181.30	181.97	182.46	184.13	185.96	187.35	188.95	190.55	193.67	198.59	188.92	5.41	83.50
180.00	182.87	180.71	181.38	182.05	182.65	184.14	185.97	187.36	188.96	190.56	193.68	198.60	188.93	5.42	83.67
183.04	183.07	180.78	181.46	182.20	182.79	184.15	185.98	187.37	188.97	190.57	193.69	198.61	188.94	5.54	84.17
185.35	183.16	180.81	181.54	182.28	182.81	184.16	185.99	187.38	188.98	190.58	193.70	198.62	188.95	5.64	84.89
188.00	183.20	180.82	181.56	182.31	182.84	184.17	186.00	187.39	188.99	190.59	193.71	198.63	188.96	5.72	85.08
187.70	183.28	180.84	181.61	182.34	182.87	184.18	186.01	187.40	189.00	190.60	193.72	198.64	188.97	5.82	85.85
191.00	183.33	180.88	181.63	182.42	183.00	185.13	187.05	188.04	189.01	190.61	193.73	198.65	188.98	5.96	86.28
190.08	183.38	180.89	181.65	182.44	183.01	185.14	187.06	188.05	189.02	190.62	193.74	198.66	188.99	6.05	86.83
192.51	183.50	180.85	181.61	182.47	183.03	185.28	187.13	188.08	189.03	190.63	193.75	198.67	189.00	6.18	86.9
194.87	183.61	180.86	181.61	182.47	183.03	185.28	187.13	188.08	189.03	190.63	193.75	198.67	189.00	6.42	87.71
195.89	183.66	180.81	181.59	182.47	183.03	185.27	187.12	188.07	189.02	190.62	193.74	198.66	188.99	6.53	88.01
197.48	183.72	180.88	181.49	182.47	183.03	185.27	187.12	188.07	189.02	190.62	193.74	198.66	188.99	6.68	88.44
200.04	183.83	180.82	181.44	182.45	183.01	185.26	187.10	188.05	188.99	190.60	193.72	198.64	188.97	6.76	89.20
201.00	183.88	180.85	181.47	182.47	183.04	185.29	187.11	188.06	189.00	190.61	193.73	198.65	188.98	6.91	89.49
202.65	183.95	180.78	181.67	182.52	183.08	185.35	187.16	188.10	189.04	190.65	193.77	198.69	189.02	7.24	89.89
205.33	184.04	180.78	181.67	182.52	183.08	185.35	187.16	188.10	189.04	190.65	193.77	198.69	189.02	7.29	89.89
206.00	184.09	181.02	181.72	182.54	183.08	185.38	187.17	188.11	189.05	190.66	193.78	198.70	189.03	7.42	90.77
209.11	184.13	180.97	181.72	182.54	183.08	185.38	187.17	188.11	189.05	190.66	193.78	198.70	189.03	7.49	90.97
211.00	184.30	180.95	181.70	182.54	183.04	185.30	187.08	188.07	188.96	190.57	193.69	198.61	188.94	7.19	81.59
211.08	184.30	180.94	181.69	182.49	182.99	185.28	187.06	188.05	188.94	190.55	193.67	198.59	188.92	7.02	82.45
213.22	184.39	180.97	181.69	182.49	182.99	185.28	187.06	188.05	188.94	190.55	193.67	198.59	188.92	7.02	82.47
214.40	184.44	180.99	181.81	182.51	183.04	185.31	187.09	188.08	189.00	190.58	193.70	198.62	188.95	7.28	83.10
216.17	184.47	180.95	181.81	182.51	183.04	185.31	187.09	188.08	189.00	190.58	193.70	198.62	188.95	7.61	83.45
218.52	184.50	180.88	181.14	182.72	183.24	185.59	187.36	188.34	189.24	190.66	193.78	198.70	188.99	7.80	83.88
219.55	184.50	180.85	181.14	182.72	183.24	185.59	187.36	188.34	189.24	190.66	193.78	198.70	188.99	8.13	83.85
218.72	184.51	180.89	181.14	182.72	183.24	185.59	187.36	188.34	189.24	190.66	193.78	198.70	188.99	8.24	83.83
218.98	184.52	180.88	181.18	182.71	183.23	185.58	187.35	188.33	189.23	190.65	193.77	198.69	188.98	8.41	83.97
218.73	184.53	180.72	181.24	182.71	183.23	185.58	187.35	188.33	189.23	190.65	193.77	198.69	188.98	8.41	84.07
218.78	184.53	180.72	181.24	182.71	183.23	185.58	187.35	188.33	189.23	190.65	193.77	198.69	188.98	8.49	84.18
218.98	184.54	180.83	181.33	182.71	183.23	185.58	187.35	188.33	189.23	190.65	193.77	198.69	188.98	8.50	84.18
217.87	184.57	180.82	181.30	182.70	183.22	185.57	187.34	188.32	189.22	190.64	193.76	198.68	188.97	8.70	84.21
220.31	184.67	180.70	181.22	182.69	183.21	185.56	187.33	188.31	189.21	190.63	193.75	198.67	188.96	8.26	84.43
223.00	184.78	180.77	181.29	182.69	183.21	185.56	187.33	188.31	189.21	190.63	193.75	198.67	188.96	8.33	84.48
224.00	184.82	181.29	181.78	182.68	183.20	185.55	187.32	188.30	189.20	190.62	193.74	198.66	188.95	8.43	84.89
225.00	184.85	180.88	181.59	182.68	183.20	185.55	187.32	188.30	189.20	190.62	193.74	198.66	188.95	8.50	84.89
228.00	184.89	180.89	181.59	182.68	183.20	185.55	187.32	188.30	189.20	190.62	193.74	198.66	188.95	8.63	84.89
228.00	184.93	181.25	181.78	182.68	183.20	185.55	187.32	188.30	189.20	190.62	193.74	198.66	188.95	8.63	84.89
228.00	184.97	181.28	181.81	182.68	183.20	185.55	187.32	188.30	189.20	190.62	193.74	198.66	188.95	8.67	84.89
228.00	184.97	181.28	181.81	182.68	183.20	185.55	187.32	188.30	189.20	190.62	193.74	198.66	188.95	8.67	84.89

JOHNSON & GERRARD CUMULATIVE DISTRIBUTION DATA  
 TERRAIN DELTA N. 50 FT  
 SURFACE REFLECTION LOSS (DETERMINES W/DEN)  
 AIRCRAFT ANTENNA ALTITUDE 5000 FT ABOVE MSL  
 TYPE ISOTROPIC POLARIZATION CIRCULAR  
 CLIMATE CLERBT  
 FACILITY ANTENNA HEIGHT 20.0 FT ABOVE MSL  
 TYPE BIOTROPIC POLARIZATION CIRCULAR  
 REFRACTIVITY EFFECTIVE EARTH RADIUS 4231 NM  
 TYPE MONTHLY MEAN 200 UNITS  
 TIME AVAILABILITY FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

D (NM)	FREE SPACE	1%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	EXP VALUE	STD DEV	EFF DIST
1 00	138 56	138 42	138 48	138 52	138 55	138 56	138 61	138 64	138 68	138 71	138 77	138 81	138 82	0 12	0 22
5 85	139 56	139 42	139 48	139 53	139 57	139 60	139 63	139 66	139 69	139 73	139 77	139 81	139 83	0 12	1 23
10 85	141 47	141 36	141 40	141 45	141 52	141 58	141 62	141 66	141 69	141 75	141 77	141 83	141 85	0 12	2 33
13 70	142 66	142 61	142 68	142 69	142 72	142 75	142 78	142 79	142 82	142 84	142 87	142 89	142 90	0 12	2 88
17 00	144 23	144 16	144 20	144 25	144 29	144 32	144 35	144 38	144 41	144 45	144 51	144 55	144 56	0 12	3 89
24 44	146 38	146 32	146 38	146 41	146 45	146 48	146 51	146 54	146 58	146 64	146 67	146 71	146 72	0 12	5 32
28 56	147 78	147 72	147 81	147 84	147 90	147 93	147 96	147 99	148 03	148 06	148 12	148 16	148 17	0 12	6 43
32 81	148 59	148 50	148 64	148 69	148 73	148 78	148 79	148 82	148 85	148 89	148 94	148 99	148 99	0 12	7 14
38 76	149 49	149 52	149 58	149 61	149 65	149 68	149 71	149 74	149 77	149 81	149 87	149 91	149 91	0 12	8 00
41 68	150 80	150 67	150 81	150 84	150 89	150 91	150 94	150 97	151 02	151 04	151 09	151 15	151 15	0 12	9 07
48 00	151 86	151 76	151 80	151 85	151 89	151 92	151 96	151 98	152 02	152 06	152 11	152 15	152 15	0 12	10 45
55 93	152 93	152 83	152 87	152 91	152 95	152 98	153 01	153 04	153 08	153 13	153 17	153 21	153 21	0 12	12 17
60 40	153 58	153 50	153 53	153 57	153 60	153 63	153 66	153 69	153 73	153 78	153 81	153 85	153 85	0 12	13 14
65 90	154 27	154 19	154 23	154 26	154 30	154 33	154 36	154 39	154 43	154 48	154 51	154 55	154 55	0 12	14 27
70 40	154 82	154 74	154 78	154 81	154 85	154 88	154 91	154 94	154 98	155 03	155 07	155 11	155 11	0 12	15 41
75 89	155 51	155 43	155 47	155 50	155 54	155 57	155 60	155 63	155 67	155 72	155 76	155 80	155 80	0 12	16 61
80 70	156 03	156 00	156 03	156 06	156 09	156 12	156 15	156 18	156 22	156 27	156 31	156 35	156 35	0 12	17 85
85 76	156 55	156 51	156 54	156 57	156 60	156 63	156 66	156 69	156 73	156 78	156 82	156 86	156 86	0 12	19 17
90 70	157 03	157 03	157 07	157 09	157 12	157 15	157 18	157 21	157 24	157 29	157 33	157 37	157 37	0 12	20 79
95 62	157 47	157 47	157 50	157 53	157 56	157 59	157 62	157 65	157 69	157 74	157 78	157 82	157 82	0 12	21 94
100 83	157 84	157 84	157 87	157 90	157 93	157 96	157 99	158 02	158 06	158 11	158 15	158 19	158 19	0 12	23 80
105 58	158 33	158 33	158 36	158 39	158 42	158 45	158 48	158 51	158 55	158 60	158 64	158 68	158 68	0 12	25 96
110 31	158 71	158 71	158 74	158 77	158 80	158 83	158 86	158 89	158 93	158 98	159 02	159 06	159 06	0 12	28 41
115 43	159 10	159 10	159 13	159 16	159 19	159 22	159 25	159 28	159 32	159 37	159 41	159 45	159 45	0 12	31 22
120 95	159 40	159 40	159 43	159 46	159 49	159 52	159 55	159 58	159 62	159 67	159 71	159 75	159 75	0 12	34 40
125 78	159 84	159 84	159 87	159 90	159 93	159 96	159 99	160 02	160 06	160 11	160 15	160 19	160 19	0 12	37 99
130 88	160 18	160 18	160 21	160 24	160 27	160 30	160 33	160 36	160 40	160 45	160 49	160 53	160 53	0 12	41 99
135 82	160 50	160 50	160 53	160 56	160 59	160 62	160 65	160 68	160 72	160 77	160 81	160 85	160 85	0 12	46 44
140 72	160 81	160 81	160 84	160 87	160 90	160 93	160 96	160 99	161 02	161 06	161 10	161 14	161 14	0 12	51 38
145 63	161 02	161 02	161 05	161 08	161 11	161 14	161 17	161 20	161 24	161 29	161 33	161 37	161 37	0 12	56 80
150 75	161 40	161 40	161 43	161 46	161 49	161 52	161 55	161 58	161 62	161 67	161 71	161 75	161 75	0 12	62 79
155 68	161 68	161 68	161 71	161 74	161 77	161 80	161 83	161 86	161 90	161 95	162 00	162 04	162 04	0 12	69 37
160 83	161 95	161 95	161 98	162 01	162 04	162 07	162 10	162 13	162 17	162 22	162 26	162 30	162 30	0 12	76 65
165 81	162 23	162 23	162 26	162 29	162 32	162 35	162 38	162 41	162 45	162 50	162 54	162 58	162 58	0 12	84 66
170 61	162 47	162 47	162 50	162 53	162 56	162 59	162 62	162 65	162 69	162 74	162 78	162 82	162 82	0 12	93 39
175 63	162 73	162 73	162 76	162 79	162 82	162 85	162 88	162 91	162 95	163 00	163 04	163 08	163 08	0 12	102 90
180 88	162 96	162 96	162 99	163 02	163 05	163 08	163 11	163 14	163 18	163 23	163 27	163 31	163 31	0 12	113 23
185 97	163 21	163 21	163 24	163 27	163 30	163 33	163 36	163 39	163 43	163 48	163 52	163 56	163 56	0 12	124 25
190 85	163 44	163 44	163 47	163 50	163 53	163 56	163 59	164 02	164 07	164 12	164 16	164 20	164 20	0 12	136 00
195 88	163 67	163 67	163 70	163 73	163 76	163 79	163 82	163 85	163 89	163 94	163 98	164 02	164 02	0 12	148 51
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209 08	164 18	164 18	164 21	164 24	164 27	164 30	164 33	164 36	164 40	164 45	164 49	164 53	164 53	0 12	194 38
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215 32	164 49	164 49	164 52	164 55	164 58	165 01	165 04	165 07	165 11	165 16	165 20	165 24	165 24	0 12	297 00
216 00	164 62	164 62	164 65	164 68	164 71	164 74	164 77	164 80	164 84	164 89	164 93	164 97	164 97	0 12	321 80
217 19	164 66	164 66	164 69	164 72	164 75	164 78	164 81	164 84	164 88	164 93	164 97	165 01	165 01	0 12	348 00
218 00	164 84	164 84	164 87	164 90	164 93	164 96	164 99	165 02	165 06	165 11	165 15	165 19	165 19	0 12	376 00
219 99	164 71	164 71	164 74	164 77	164 80	164 83	164 86	164 89	164 93	164 98	165 02	165 06	165 06	0 12	405 00
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221 00	164 71	164 71	164 74	164 77	164 80	164 83	164 86	164 89	164 93	164 98	165 02	165 06	165 06	0 12	466 00
222 87	164 86	164 86	164 89	164 92	164 95	164 98	165 01	165 04	165 08	165 13	165 17	165 21	165 21	0 12	498 00
224 87	164 86	164 86	164 89	164 92	164 95	164 98	165 01	165 04	165 08	165 13	165 17	165 21	165 21	0 12	531 00
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SURFACE REFLECTION LOSS CONTRIBUTES TO VARIABILITY

JOHNSON & OERHART CUMULATIVE DISTRIBUTION DATA  
TERRAIN DELTA N 54 FT  
TYPE ISOTROPIC POLARIZATION CIRCULAR  
TYPE ISOTROPIC POLARIZATION CIRCULAR  
MINIMUM MONTHLY MEAN 200 M UNITS

TIME A VARIABILITY FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY 40 GHz  
AIRCRAFT ANTENNA ALTITUDE 30000 FT ABOVE MSL  
FACILITY ANTENNA HEIGHT 20 FT ABOVE MSL  
REFRACTIVITY EFFECTIVE EARTH RADIUS 4423 NM

D (M IN)	FREE SPACE	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	EXP VALUE	STD DEV	EFF DIST
1.00	132.84	132.81	132.56	132.60	132.64	132.67	132.70	132.73	132.76	132.80	132.85	132.90	132.70	0.12	0.30
5.87	135.70	135.69	135.64	135.69	135.72	135.76	135.78	135.81	135.85	135.90	135.94	135.98	135.79	0.12	1.68
9.37	138.50	138.43	138.47	138.52	138.56	138.59	138.62	138.65	138.68	138.72	138.76	138.82	138.62	0.12	2.77
16.77	142.00	141.98	142.03	142.08	142.12	142.15	142.18	142.21	142.24	142.28	142.34	142.38	142.18	0.12	4.82
18.75	143.82	143.85	143.88	143.94	143.97	144.01	144.04	144.07	144.11	144.14	144.18	144.23	144.04	0.12	5.55
24.04	146.65	146.74	146.78	146.83	146.87	146.91	146.95	146.98	147.02	147.06	147.10	147.14	146.93	0.12	7.12
30.74	149.50	149.58	149.61	149.66	149.69	149.73	149.76	149.79	149.83	149.86	149.90	149.94	149.74	0.12	9.10
35.94	152.35	152.42	152.45	152.50	152.53	152.56	152.59	152.62	152.65	152.68	152.72	152.75	152.55	0.12	10.64
43.98	155.16	155.23	155.27	155.32	155.35	155.38	155.41	155.44	155.47	155.50	155.54	155.57	155.37	0.12	12.13
48.84	157.96	158.03	158.07	158.12	158.15	158.18	158.21	158.24	158.27	158.30	158.34	158.37	158.17	0.12	13.67
60.88	160.77	160.84	160.88	160.93	160.96	160.99	161.02	161.05	161.08	161.11	161.15	161.18	160.98	0.12	15.20
82.81	163.58	163.65	163.69	163.74	163.77	163.80	163.83	163.86	163.89	163.92	163.96	163.99	163.79	0.12	16.87
85.99	165.39	165.46	165.50	165.55	165.58	165.61	165.64	165.67	165.70	165.73	165.77	165.80	165.60	0.12	17.91
60.50	167.20	167.27	167.31	167.36	167.39	167.42	167.45	167.48	167.51	167.54	167.58	167.61	167.41	0.12	16.48
66.74	169.01	169.08	169.12	169.17	169.20	169.23	169.26	169.29	169.32	169.35	169.39	169.42	169.22	0.12	20.86
70.82	170.82	170.89	170.93	170.98	171.01	171.04	171.07	171.10	171.13	171.16	171.20	171.23	171.03	0.12	20.86
84.84	172.63	172.70	172.74	172.79	172.82	172.85	172.88	172.91	172.94	172.97	173.01	173.04	172.84	0.12	22.47
76.93	174.44	174.51	174.55	174.60	174.63	174.66	174.69	174.72	174.75	174.78	174.82	174.85	174.65	0.12	23.81
88.77	176.25	176.32	176.36	176.41	176.44	176.47	176.50	176.53	176.56	176.59	176.63	176.66	176.46	0.12	25.42
85.87	178.06	178.13	178.17	178.22	178.25	178.28	178.31	178.34	178.37	178.40	178.44	178.47	178.27	0.12	28.84
90.89	179.87	179.94	179.98	180.03	180.06	180.09	180.12	180.15	180.18	180.21	180.25	180.28	180.08	0.12	28.41
95.98	181.68	181.75	181.79	181.84	181.87	181.90	181.93	181.96	181.99	182.02	182.06	182.09	181.89	0.12	29.78
100.84	183.49	183.56	183.60	183.65	183.68	183.71	183.74	183.77	183.80	183.83	183.87	183.90	183.70	0.12	31.27
105.64	185.30	185.37	185.41	185.46	185.49	185.52	185.55	185.58	185.61	185.64	185.68	185.71	185.51	0.12	32.85
110.84	187.11	187.18	187.22	187.27	187.30	187.33	187.36	187.39	187.42	187.45	187.49	187.52	187.32	0.12	34.28
115.82	188.92	188.99	189.03	189.08	189.11	189.14	189.17	189.20	189.23	189.26	189.30	189.33	189.13	0.12	35.81
121.00	190.73	190.80	190.84	190.89	190.92	190.95	190.98	191.01	191.04	191.07	191.11	191.14	190.94	0.12	37.27
126.92	192.54	192.61	192.65	192.70	192.73	192.76	192.79	192.82	192.85	192.88	192.92	192.95	192.75	0.12	38.73
130.87	194.35	194.42	194.46	194.51	194.54	194.57	194.60	194.63	194.66	194.69	194.73	194.76	194.56	0.12	40.18
135.77	196.16	196.23	196.27	196.32	196.35	196.38	196.41	196.44	196.47	196.50	196.54	196.57	196.37	0.12	41.71
140.84	197.97	198.04	198.08	198.13	198.16	198.19	198.22	198.25	198.28	198.31	198.35	198.38	198.18	0.12	43.18
145.89	199.78	199.85	199.89	199.94	199.97	200.00	200.03	200.06	200.09	200.12	200.16	200.19	199.99	0.12	44.88
150.87	201.59	201.66	201.70	201.75	201.78	201.81	201.84	201.87	201.90	201.93	201.97	202.00	201.80	0.12	46.11
155.78	203.40	203.47	203.51	203.56	203.59	203.62	203.65	203.68	203.71	203.74	203.78	203.81	203.61	0.12	47.57
160.72	205.21	205.28	205.32	205.37	205.40	205.43	205.46	205.49	205.52	205.55	205.59	205.62	205.42	0.12	49.09
165.87	207.02	207.09	207.13	207.18	207.21	207.24	207.27	207.30	207.33	207.36	207.40	207.43	207.23	0.12	50.58
170.90	208.83	208.90	208.94	208.99	209.02	209.05	209.08	209.11	209.14	209.17	209.21	209.24	209.04	0.12	52.05
176.87	210.64	210.71	210.75	210.80	210.83	210.86	210.89	210.92	210.95	210.98	211.02	211.05	210.85	0.12	53.54
180.87	212.45	212.52	212.56	212.61	212.64	212.67	212.70	212.73	212.76	212.79	212.83	212.86	212.66	0.12	54.94
185.88	214.26	214.33	214.37	214.42	214.45	214.48	214.51	214.54	214.57	214.60	214.64	214.67	214.47	0.12	56.47
190.88	216.07	216.14	216.18	216.23	216.26	216.29	216.32	216.35	216.38	216.41	216.45	216.48	216.28	0.12	57.91
195.88	217.88	217.95	218.00	218.05	218.08	218.11	218.14	218.17	218.20	218.23	218.27	218.30	218.10	0.12	59.42
200.87	219.69	219.76	219.80	219.85	219.88	219.91	219.94	219.97	220.00	220.03	220.07	220.10	219.90	0.12	60.88
205.70	221.50	221.57	221.61	221.66	221.69	221.72	221.75	221.78	221.81	221.84	221.88	221.91	221.71	0.12	62.40
210.84	223.31	223.38	223.42	223.47	223.50	223.53	223.56	223.59	223.62	223.65	223.69	223.72	223.52	0.12	63.88
215.84	225.12	225.19	225.23	225.28	225.31	225.34	225.37	225.40	225.43	225.46	225.50	225.53	225.33	0.12	65.41
220.84	226.93	227.00	227.04	227.09	227.12	227.15	227.18	227.21	227.24	227.27	227.31	227.34	227.14	0.12	66.94
225.00	228.74	228.81	228.85	228.90	228.93	228.96	228.99	229.02	229.05	229.08	229.12	229.15	228.95	0.12	68.47
229.00	230.55	230.62	230.66	230.71	230.74	230.77	230.80	230.83	230.86	230.89	230.93	230.96	230.76	0.12	70.00
233.00	232.36	232.43	232.47	232.52	232.55	232.58	232.61	232.64	232.67	232.70	232.74	232.77	232.57	0.12	71.53
237.00	234.17	234.24	234.28	234.33	234.36	234.39	234.42	234.45	234.48	234.51	234.55	234.58	234.38	0.12	73.06
241.00	235.98	236.05	236.09	236.14	236.17	236.20	236.23	236.26	236.29	236.32	236.36	236.39	236.19	0.12	74.59
245.00	237.79	237.86	237.90	237.95	237.98	238.01	238.04	238.07	238.10	238.13	238.17	238.20	238.00	0.12	76.12
249.00	239.60	239.67	239.71	239.76	239.79	239.82	239.85	239.88	239.91	239.94	239.98	240.01	239.81	0.12	77.65
253.00	241.41	241.48	241.52	241.57	241.60	241.63	241.66	241.69	241.72	241.75	241.79	241.82	241.62	0.12	79.18
257.00	243.22	243.29	243.33	243.38	243.41	243.44	243.47	243.50	243.53	243.56	243.60	243.63	243.43	0.12	80.71
261.00	245.03	245.10	245.14	245.19	245.22	245.25	245.28	245.31	245.34	245.37	245.41	245.44	245.24	0.12	82.24
265.00	246.84	246.91	246.95	247.00	247.03	247.06	247.09	247.12	247.15	247.18	247.22	247.25	247.05	0.12	83.77
269.00	248.65	248.72	248.76	248.81	248.84	248.87	248.90	248.93	248.96	248.99	249.03	249.06	248.86	0.12	85.30
273.00	250.46	250.53	250.57	250.62	250.65	250.68	250.71	250.74	250.77	250.80	250.84	250.87	250.67	0.12	86.83
277.00	252.27	252.34	252.38	252.43	252.46	252.49	252.52	252.55	252.58	252.61	252.65	252.68	252.48	0.12	88.36
281.00	254.08	254.15	254.19	254.24	254.27	254.30	254.33	254.36	254.39	254.42	254.46	254.49	254.29	0.12	89.89
285.00	255.89	255.96	256.00	256.05	256.08	256.11	256.14	256.17	256.20	256.23	256.27	256.30	256.10	0.12	91.42
289.00	257.70	257.77	257.81	257.86	257.89	257.92	257.95	257.98	258.01	258.04	258.08	258.11	257.91	0.12	92.95
293.00	259.51	259.58	259.62	259.67	259.70	259.73	259.76	259.79	259.82	259.85	259.89	259.92	259.72	0.12	94.48
297.00	261.32	261.39	261.43	261.48	261.51	261.54	261.57	261.60	261.63	261.66	261.70	261.73	261.53	0.12	96.01
301.00	263.13	263.20	263.24	263.29	263.32	263.35	263.38	263.41	263.44	263.47	263.51	263.54	263.34</		

FREQUENCY 10.02Z  
 AIRCRAFT ANTENNA ALTITUDE 4000 FT ABOVE USL  
 FACILITY ANTENNA HEIGHT 30.0 FT ABOVE USL  
 REFRACTIVITY EFFECTIVE EARTH RADIUS 4030 NM

JOHNSON & GEHART CUMULATIVE DISTRIBUTION DATA  
 TERRAIN DELTA IN 50 FT  
 SURFACE TYPE POOR GROUND  
 CLIMATE DESERT

TYPE BC TOPIC POLARIZATION CIRCULAR  
 TYPE RC TOPIC POLARIZATION CIRCULAR

MONTHLY MEAN 20 HOURS  
 TIME AVAILABILITY FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

D (NM)	FREE SPACE	5%	10%	20%	30%	40%	50%	60%	70%	80%	90%	95%	F P VALUE	STD DEV	EFF DIST
1.00	139.58	138.42	138.48	138.52	138.56	138.58	138.61	138.64	138.68	138.71	138.77	138.81	138.82	0.12	0.22
6.46	139.58	139.44	139.48	139.53	139.57	139.60	139.63	139.66	139.69	139.73	139.78	139.83	139.83	0.12	1.23
10.89	141.47	141.36	141.40	141.45	141.49	141.52	141.55	141.58	141.61	141.65	141.71	141.76	141.76	0.12	2.33
13.70	142.86	142.87	142.81	142.86	142.90	142.93	142.96	142.99	143.02	143.06	143.11	143.16	143.16	0.12	2.98
17.90	144.22	144.28	144.34	144.39	144.44	144.48	144.53	144.58	144.63	144.68	144.73	144.78	144.78	0.12	3.49
24.44	146.38	146.32	146.38	146.44	146.48	146.53	146.58	146.63	146.68	146.73	146.78	146.83	146.83	0.12	5.32
29.58	147.78	147.71	147.78	147.84	147.90	147.95	148.00	148.05	148.10	148.15	148.20	148.25	148.25	0.12	8.43
37.81	148.58	148.51	148.58	148.64	148.70	148.75	148.80	148.85	148.90	148.95	149.00	149.05	149.05	0.12	7.14
41.68	148.48	148.41	148.48	148.54	148.60	148.65	148.70	148.75	148.80	148.85	148.90	148.95	148.95	0.12	8.00
48.00	151.06	151.00	151.06	151.12	151.18	151.24	151.30	151.36	151.42	151.48	151.54	151.60	151.60	0.12	9.07
55.83	152.82	152.82	152.82	152.82	152.82	152.82	152.82	152.82	152.82	152.82	152.82	152.82	152.82	0.12	10.48
65.40	153.58	153.58	153.58	153.58	153.58	153.58	153.58	153.58	153.58	153.58	153.58	153.58	153.58	0.12	12.17
81.40	154.27	154.49	154.53	154.58	154.63	154.68	154.73	154.78	154.83	154.88	154.93	154.98	154.98	0.12	13.14
70.80	154.92	154.92	154.92	154.92	154.92	154.92	154.92	154.92	154.92	154.92	154.92	154.92	154.92	0.12	14.27
74.80	155.51	155.51	155.51	155.51	155.51	155.51	155.51	155.51	155.51	155.51	155.51	155.51	155.51	0.12	15.41
80.70	156.03	156.03	156.03	156.03	156.03	156.03	156.03	156.03	156.03	156.03	156.03	156.03	156.03	0.12	17.68
85.70	156.56	156.56	156.56	156.56	156.56	156.56	156.56	156.56	156.56	156.56	156.56	156.56	156.56	0.12	17.68
90.70	157.03	157.03	157.03	157.03	157.03	157.03	157.03	157.03	157.03	157.03	157.03	157.03	157.03	0.12	18.87
96.53	157.47	157.47	157.47	157.47	157.47	157.47	157.47	157.47	157.47	157.47	157.47	157.47	157.47	0.12	19.74
100.33	157.84	157.84	157.84	157.84	157.84	157.84	157.84	157.84	157.84	157.84	157.84	157.84	157.84	0.12	20.78
105.84	158.33	158.33	158.33	158.33	158.33	158.33	158.33	158.33	158.33	158.33	158.33	158.33	158.33	0.12	21.84
110.31	158.71	158.71	158.71	158.71	158.71	158.71	158.71	158.71	158.71	158.71	158.71	158.71	158.71	0.12	22.88
115.42	159.10	159.10	159.10	159.10	159.10	159.10	159.10	159.10	159.10	159.10	159.10	159.10	159.10	0.12	24.01
120.94	159.50	159.50	159.50	159.50	159.50	159.50	159.50	159.50	159.50	159.50	159.50	159.50	159.50	0.12	25.12
126.78	159.84	159.84	159.84	159.84	159.84	159.84	159.84	159.84	159.84	159.84	159.84	159.84	159.84	0.12	26.32
132.82	160.18	160.18	160.18	160.18	160.18	160.18	160.18	160.18	160.18	160.18	160.18	160.18	160.18	0.12	27.57
139.02	160.50	160.50	160.50	160.50	160.50	160.50	160.50	160.50	160.50	160.50	160.50	160.50	160.50	0.12	28.88
145.32	160.81	160.81	160.81	160.81	160.81	160.81	160.81	160.81	160.81	160.81	160.81	160.81	160.81	0.12	30.25
151.70	161.12	161.12	161.12	161.12	161.12	161.12	161.12	161.12	161.12	161.12	161.12	161.12	161.12	0.12	31.76
158.18	161.43	161.43	161.43	161.43	161.43	161.43	161.43	161.43	161.43	161.43	161.43	161.43	161.43	0.12	33.80
164.76	161.74	161.74	161.74	161.74	161.74	161.74	161.74	161.74	161.74	161.74	161.74	161.74	161.74	0.12	35.00
171.44	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	162.05	0.12	36.08
178.12	162.36	162.36	162.36	162.36	162.36	162.36	162.36	162.36	162.36	162.36	162.36	162.36	162.36	0.12	37.13
184.80	162.67	162.67	162.67	162.67	162.67	162.67	162.67	162.67	162.67	162.67	162.67	162.67	162.67	0.12	38.22
191.48	162.98	162.98	162.98	162.98	162.98	162.98	162.98	162.98	162.98	162.98	162.98	162.98	162.98	0.12	39.38
198.16	163.29	163.29	163.29	163.29	163.29	163.29	163.29	163.29	163.29	163.29	163.29	163.29	163.29	0.12	40.65
204.84	163.60	163.60	163.60	163.60	163.60	163.60	163.60	163.60	163.60	163.60	163.60	163.60	163.60	0.12	42.66
211.52	163.91	163.91	163.91	163.91	163.91	163.91	163.91	163.91	163.91	163.91	163.91	163.91	163.91	0.12	43.72
218.20	164.22	164.22	164.22	164.22	164.22	164.22	164.22	164.22	164.22	164.22	164.22	164.22	164.22	0.12	44.82
224.88	164.53	164.53	164.53	164.53	164.53	164.53	164.53	164.53	164.53	164.53	164.53	164.53	164.53	0.12	45.88
231.56	164.84	164.84	164.84	164.84	164.84	164.84	164.84	164.84	164.84	164.84	164.84	164.84	164.84	0.12	47.00
238.24	165.15	165.15	165.15	165.15	165.15	165.15	165.15	165.15	165.15	165.15	165.15	165.15	165.15	0.12	48.18
244.92	165.46	165.46	165.46	165.46	165.46	165.46	165.46	165.46	165.46	165.46	165.46	165.46	165.46	0.12	49.44
251.60	165.77	165.77	165.77	165.77	165.77	165.77	165.77	165.77	165.77	165.77	165.77	165.77	165.77	0.12	50.80
258.28	166.08	166.08	166.08	166.08	166.08	166.08	166.08	166.08	166.08	166.08	166.08	166.08	166.08	0.12	52.28
264.96	166.39	166.39	166.39	166.39	166.39	166.39	166.39	166.39	166.39	166.39	166.39	166.39	166.39	0.12	53.80
271.64	166.70	166.70	166.70	166.70	166.70	166.70	166.70	166.70	166.70	166.70	166.70	166.70	166.70	0.12	55.38
278.32	167.01	167.01	167.01	167.01	167.01	167.01	167.01	167.01	167.01	167.01	167.01	167.01	167.01	0.12	57.00
285.00	167.32	167.32	167.32	167.32	167.32	167.32	167.32	167.32	167.32	167.32	167.32	167.32	167.32	0.12	58.68
291.68	167.63	167.63	167.63	167.63	167.63	167.63	167.63	167.63	167.63	167.63	167.63	167.63	167.63	0.12	60.40
298.36	167.94	167.94	167.94	167.94	167.94	167.94	167.94	167.94	167.94	167.94	167.94	167.94	167.94	0.12	62.16
305.04	168.25	168.25	168.25	168.25	168.25	168.25	168.25	168.25	168.25	168.25	168.25	168.25	168.25	0.12	63.96
311.72	168.56	168.56	168.56	168.56	168.56	168.56	168.56	168.56	168.56	168.56	168.56	168.56	168.56	0.12	65.80
318.40	168.87	168.87	168.87	168.87	168.87	168.87	168.87	168.87	168.87	168.87	168.87	168.87	168.87	0.12	67.68
325.08	169.18	169.18	169.18	169.18	169.18	169.18	169.18	169.18	169.18	169.18	169.18	169.18	169.18	0.12	69.60
331.76	169.49	169.49	169.49	169.49	169.49	169.49	169.49	169.49	169.49	169.49	169.49	169.49	169.49	0.12	71.56
338.44	169.80	169.80	169.80	169.80	169.80	169.80	169.80	169.80	169.80	169.80	169.80	169.80	169.80	0.12	73.56
345.12	170.11	170.11	170.11	170.11	170.11	170.11	170.11	170.11	170.11	170.11	170.11	170.11	170.11	0.12	75.60
351.80	170.42	170.42	170.42	170.42	170.42	170.42	170.42	170.42	170.42	170.42	170.42	170.42	170.42	0.12	77.68
358.48	170.73	170.73	170.73	170.73	170.73	170.73	170.73	170.73	170.73	170.73	170.73	170.73	170.73	0.12	79.80
365.16	171.04	171.04	171.04	171.04	171.04	171.04	171.04	171.04	171.04	171.04	171.04	171.04	171.04	0.12	82.00
371.84	171.35	171.35	171.35	171.35	171.35	171.35	171.35	171.35	171.35	171.35	171.35	171.35	171.35	0.12	84.28
378.52	171.66	171.66	171.66	171.66	171.66	171.66	171.66	171.66	171.66	171.66	171.66	171.66	171.66	0.12	86.64
385.20	171.97	171.97	171.97	171.97	171.97	171.97	171.97	171.97	171.97	171.97	171.97	171.97	171.97	0.12	89.08
391.88	172.28	172.28	172.28	172.28	172.28	172.28	172.28	172.28	172.28	172.28	172.28	172.28	172.28	0.12	91.60
398.56	172.59	172.59	172.59	172.59	172.59	172.59	172.59	172.59	172.59	172.59	172.59	172.59	172.59	0.12	94.20
405.24	172.90	172.90	172.90	172.90	172.90	172.90	172.90	172.90	172.90	172.90	172.90	172.90	172.90	0.12	96.88
411.92	173.21														

## APPENDIX D

### COMPUTER PRINTOUTS OF BASIC TRANSMISSION LOSS FOR VARIOUS CLIMATES

This appendix contains the Johnson-Gierhart program printouts of basic transmission loss for the climate runs of section 3.1 in volume 1. The run numbers are identified below.

Volume 2	Reference in Volume 1					Volume 2
Run No.	Table	Figure	$\Delta h$ (ft)	Lobing	Climate	Page
7	3-1	3-1	0	Determines Median	Continental All-Year	D-3
8	3-1	3-2	0	Determines Median	Equatorial	D-5
9	3-1	3-3	0	Determines Median	Continental Subtropical	D-7
10	3-1	3-4	0	Determines Median	Maritime Subtropical	D-9
11	3-1	3-5	0	Determines Median	Desert	D-11
12	3-1	3-6	0	Determines Median	Continental Temperate	D-13
13	3-1	3-7	0	Determines Median	Maritime Temperate Overland	D-15
14	3-1	3-8	0	Determines Median	Maritime Temperate Overseas	D-17
15	3-2	3-1	0	Contributes to Variability	Continental All-Year	D-19
16	3-2	3-2	0	Contributes to Variability	Equatorial	D-21
17	3-2	3-3	0	Contributes to Variability	Continental Subtropical	D-23
18	3-2	3-4	0	Contributes to Variability	Maritime Subtropical	D-25
19	3-2	3-5	0	Contributes to Variability	Desert	D-27
20	3-2	3-6	0	Contributes to Variability	Continental Temperate	D-29
21	3-2	3-7	0	Contributes to Variability	Maritime Temperate Overland	D-31
22	3-2	3-8	0	Contributes to Variability	Maritime Temperate Overseas	D-33
23	3-3	3-15, 3-16	50	Determines Median	Continental All-Year	D-35
24	3-3	3-15, 3-16	50	Determines Median	Equatorial	D-37
25	3-3	3-15, 3-16	50	Determines Median	Continental Subtropical	D-39

Volume 2	Reference in Volume 1					Volume 2
Run No.	Table	Figure	$\Delta h$ (ft)	Lobing	Climate	Page
26	3-3	3-15, 3-16	50	Determines Median	Maritime Subtropical	D-41
27	3-3	3-15, 3-16	50	Determines Median	Desert	D-43
28	3-3	3-15, 3-16	50	Determines Median	Continental Temperate	D-45
29	3-3	3-15, 3-16	50	Determines Median	Maritime Temperate Overland	D-47
30	3-3	3-15, 3-16	50	Determines Median	Maritime Temperate Overseas	D-49
31	3-4	3-17, 3-18	50	Contributes to Variability	Continental All-Year	D-51
32	3-4	3-17, 3-18	50	Contributes to Variability	Equatorial	D-53
33	3-4	3-17, 3-18	50	Contributes to Variability	Continental Subtropical	D-55
34	3-4	3-17, 3-18	50	Contributes to Variability	Maritime Subtropical	D-57
35	3-4	3-17, 3-18	50	Contributes to Variability	Desert	D-59
36	3-4	3-17, 3-18	50	Contributes to Variability	Continental Temperate	D-61
37	3-4	3-17, 3-18	50	Contributes to Variability	Maritime Temperate Overland	D-63
38	3-4	3-17, 3-18	50	Contributes to Variability	Maritime Temperate Overseas	D-65

RUN NO. 7

JOHNSON & GIERHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA: 0 FT

CLIMATE: CONTINENTAL ALL YEAR (0)

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 301 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.66	135.69	134.76	135.78	136.94	135.82	0.85	1.88
9.39	138.51	136.78	138.63	140.98	138.76	1.64	2.79
15.23	141.98	139.49	142.17	146.00	142.53	2.56	4.53
18.74	143.61	140.85	143.83	148.31	144.30	2.93	5.57
24.10	145.67	142.84	145.95	151.15	146.54	3.35	7.17
30.72	147.69	144.49	148.05	153.83	148.74	3.68	9.14
35.98	149.03	145.77	149.45	155.53	150.20	3.85	10.70
40.99	150.14	146.86	150.62	156.92	151.41	3.97	12.19
45.86	151.10	147.82	151.64	158.11	152.46	4.07	13.64
50.68	151.96	148.68	152.65	159.16	153.41	4.14	15.07
55.95	152.81	149.55	153.47	160.21	154.35	4.21	16.64
60.49	153.48	150.24	154.20	161.02	155.09	4.26	17.99
65.77	154.20	150.99	154.99	161.87	155.89	4.31	19.66
70.81	154.84	151.65	155.70	162.63	156.60	4.34	21.06
75.92	155.44	152.29	156.37	163.35	157.28	4.38	22.58
80.77	155.97	152.86	156.97	164.00	157.88	4.40	24.02
85.87	156.50	153.44	157.56	164.64	158.49	4.43	25.53
90.88	156.98	153.96	158.12	165.22	159.04	4.45	26.98
95.97	157.47	154.50	158.69	165.82	159.61	4.48	28.54
100.95	157.90	154.98	159.20	166.37	160.12	4.50	30.02
102.31	158.02	153.16	153.80	164.43	153.80	0.50	30.42
103.89	158.16	158.17	156.94	157.72	156.94	0.60	30.89
105.62	158.29	178.64	179.44	180.37	179.45	0.72	31.38
106.00	158.33	165.90	166.84	167.81	166.85	0.75	31.52
107.18	158.42	156.20	157.23	158.32	157.25	0.83	31.87
108.89	158.56	153.21	154.38	155.82	154.40	0.94	32.38
110.64	158.70	156.21	157.53	168.93	157.56	1.05	32.90
111.00	158.73	157.82	159.17	160.60	160.20	1.08	33.01
112.44	158.84	179.43	180.90	182.47	180.93	1.19	33.43
114.28	158.98	156.17	157.82	159.56	157.85	1.32	33.98
116.00	159.11	153.13	154.97	156.88	154.99	1.46	34.49
116.17	159.12	153.10	154.96	156.88	154.98	1.46	34.54
118.11	159.26	155.99	158.10	160.22	158.10	1.85	35.12
120.10	159.41	180.07	182.44	184.77	182.43	1.84	35.71
121.00	159.47	162.07	164.66	166.99	164.54	1.92	35.98
122.14	159.55	155.74	158.38	160.92	158.35	2.03	36.32
124.23	159.70	152.94	155.67	158.27	155.68	2.08	36.94
126.00	159.82	154.51	157.59	160.51	157.64	2.34	37.47
126.38	159.85	155.55	158.68	161.63	158.62	2.37	37.58
128.69	160.00	180.80	184.14	187.29	184.08	2.54	38.24
130.85	160.16	155.45	159.00	162.34	158.94	2.69	38.91
131.00	160.18	155.03	158.59	161.95	158.53	2.70	38.95
133.17	160.30	153.19	156.16	159.89	156.33	2.64	39.60
135.66	160.46	155.41	159.33	163.05	159.27	2.98	40.31
136.00	160.49	156.85	160.80	164.55	160.74	3.01	40.44
138.00	160.61	181.96	186.06	189.97	186.00	3.13	41.04
140.51	160.77	155.40	159.69	163.79	151.63	3.28	41.78
141.00	160.80	154.27	158.60	162.73	158.54	3.31	41.93
143.08	160.93	153.49	156.86	161.16	157.15	3.00	42.55
145.72	161.09	155.40	160.05	164.53	160.00	3.57	43.33
146.00	161.10	156.17	160.84	165.34	160.79	3.58	43.41

148.43	161.25	183.40	188.23	192.90	198.18	3.71	44.14
151.00	161.39	155.94	160.95	165.81	160.90	3.85	44.90
151.20	161.41	155.41	160.43	165.30	160.39	3.86	44.96
154.05	161.57	153.83	157.62	162.70	158.02	3.48	45.81
155.99	161.68	154.23	159.01	164.22	159.14	3.90	46.39
156.97	161.73	155.42	160.83	166.11	160.79	4.18	46.68
159.96	161.89	185.08	190.68	196.18	190.65	4.34	47.57
160.99	161.95	164.01	169.68	175.26	169.65	4.39	47.87
163.03	162.06	155.43	161.24	166.97	161.22	4.51	48.48
166.00	162.22	154.17	168.44	164.40	158.96	4.01	49.36
166.18	162.22	154.17	158.44	164.41	158.97	4.02	49.41
169.40	162.39	155.44	161.66	167.88	161.66	4.86	50.37
170.99	162.47	160.54	166.87	173.21	166.87	4.95	50.85
172.70	162.56	186.04	193.38	199.85	193.39	5.05	51.35
176.00	162.72	155.61	162.27	168.99	162.29	5.23	52.33
176.08	162.73	155.44	162.11	168.84	162.13	5.23	52.36
179.54	162.90	154.50	151.33	166.36	160.02	4.66	53.39
180.99	162.97	154.67	159.89	167.06	160.50	4.86	53.82
183.09	163.07	155.44	162.57	169.95	162.65	5.67	54.44
185.99	163.20	168.52	175.86	183.51	175.96	5.86	55.31
186.77	163.24	188.48	195.86	203.59	195.97	5.90	55.52
190.4	163.41	155.43	163.06	171.16	163.21	6.15	56.63
191	163.43	155.21	162.21	170.37	162.57	5.93	56.79
194.25	163.58	154.64	160.31	168.87	161.21	5.60	57.76
195.99	163.66	154.78	160.98	169.74	161.78	5.87	58.28
198.14	163.75	155.29	163.60	172.68	163.84	6.80	58.92
201.00	163.88	165.18	173.78	183.13	174.02	7.01	59.77
202.16	163.93	185.73	194.38	203.76	194.61	7.05	60.11
208.00	164.09	155.88	164.71	174.18	164.91	7.15	61.26
206.29	164.10	155.59	164.25	173.72	164.50	7.08	61.34
210.66	164.28	155.23	161.72	171.30	162.68	6.32	62.62
211.00	164.30	155.28	161.80	171.39	162.76	6.33	62.74
213.59	164.40	155.99	163.46	173.12	164.14	6.71	63.51
215.20	164.47	156.65	165.55	175.25	165.80	7.27	63.99
216.00	164.50	157.61	166.91	176.63	167.04	7.43	64.23
216.22	164.51	158.02	167.33	177.05	167.46	7.44	64.30
216.93	164.54	159.41	168.76	178.51	168.88	7.46	64.51
217.47	164.56	160.50	169.88	179.64	170.00	7.47	64.67
217.89	164.58	161.33	170.73	180.50	170.85	7.49	64.79
218.23	164.59	161.95	171.37	181.15	171.48	7.50	64.89
218.51	164.60	162.39	171.83	181.63	171.94	7.52	64.98
219.21	164.63	163.11	172.61	182.44	172.71	7.55	65.18
219.63	164.64	164.15	173.67	183.50	173.77	7.56	65.31
221.00	164.70	167.53	177.10	186.97	177.19	7.59	65.72
223.10	164.78	172.71	182.36	192.28	182.45	7.65	
226.00	164.89	183.41	193.18	203.18	193.25	7.72	
227.00	164.93	187.10	196.91	206.93	196.98	7.75	
228.00	164.97	190.79	200.64	210.69	200.70	7.77	
229.00	165.01	193.42	203.31	213.37	203.36	7.80	
230.00	165.05	194.96	204.89	214.98	204.94	7.82	
231.00	165.08	196.35	206.32	216.43	206.36	7.84	

RUN NO. 8

JOHNSON & GIERHART CLIMATE RUN DATA  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL  
 FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI  
 TERRAIN DELTA d: 0 FT  
 CLIMATE: EQUATORIAL (1)  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC  
 TYPE: ISOTROPIC  
 REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST IT: DETERMINED AT 0 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 360 N-UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.62	135.66	134.71	135.75	136.93	135.80	0.87	1.67
9.45	138.56	136.78	138.68	141.11	138.85	1.70	2.81
15.09	141.91	139.40	142.10	145.98	142.47	2.59	4.49
18.72	143.60	140.82	143.83	148.37	144.31	2.87	5.57
24.39	145.76	142.71	146.06	151.35	146.66	3.41	7.25
30.67	147.68	144.47	148.04	153.67	148.74	3.71	9.12
35.93	149.02	145.76	149.45	155.56	150.20	3.87	10.68
40.90	150.12	146.84	150.61	156.94	151.41	3.99	12.16
45.96	151.12	147.84	151.67	158.18	152.51	4.09	13.67
50.67	151.95	148.69	152.57	159.21	153.43	4.16	15.07
55.80	152.78	149.55	153.47	160.23	154.35	4.22	16.59
60.47	153.47	150.26	154.22	161.05	155.12	4.27	17.98
65.91	154.22	151.03	155.04	161.94	155.94	4.31	19.60
70.81	154.84	151.69	155.74	162.69	156.65	4.35	21.05
75.85	155.43	152.33	156.42	163.41	157.32	4.38	22.56
80.77	155.97	152.91	157.02	164.05	157.93	4.41	24.02
85.81	156.50	153.49	157.63	164.69	158.54	4.43	25.52
90.65	156.97	154.02	158.19	165.28	159.11	4.45	26.96
95.99	157.47	154.59	158.78	165.91	159.70	4.48	28.54
100.94	157.90	155.09	159.31	166.47	160.20	4.50	30.02
102.42	158.03	153.32	153.92	154.58	153.94	0.49	30.46
104.08	158.17	156.35	157.08	157.89	157.10	0.60	30.95
105.79	158.31	178.75	179.61	180.56	179.64	0.71	31.46
106.00	158.33	172.69	173.57	174.54	173.60	0.72	31.52
107.54	158.45	156.44	157.43	158.53	157.47	0.82	31.98
109.35	158.60	153.51	154.61	155.86	154.66	0.92	32.52
111.00	158.73	155.89	157.10	158.49	157.16	1.02	33.01
111.20	158.74	156.57	157.79	159.21	157.85	1.03	33.07
113.10	158.89	179.89	181.22	182.79	181.29	1.14	33.63
115.06	159.04	156.74	158.20	159.93	158.28	1.25	34.21
115.99	159.11	154.56	156.08	157.08	156.17	1.30	34.49
117.07	159.19	153.83	155.41	157.31	155.51	1.36	34.81
119.14	159.34	156.93	158.64	160.71	158.75	1.42	35.43
121.00	159.47	173.95	175.17	177.40	175.30	1.58	35.98
121.27	159.49	181.24	183.08	185.33	183.21	1.60	36.06
123.45	159.65	157.13	159.10	161.53	159.24	1.72	36.71
125.70	159.80	154.23	156.32	158.93	156.48	1.84	37.38
126.00	159.82	154.29	156.39	159.03	155.56	1.86	37.47
128.01	159.96	157.33	159.54	162.34	159.73	1.96	38.07
130.39	160.12	182.73	185.08	189.06	185.28	2.08	38.77
131.00	160.16	168.43	170.81	173.83	171.01	2.11	38.95
132.84	160.28	157.53	159.98	163.13	160.20	2.20	39.50
135.35	160.45	154.63	157.20	160.52	157.43	2.31	40.25
135.99	160.49	154.83	157.42	160.79	157.66	2.34	40.44
137.94	160.61	157.74	160.42	163.93	160.68	2.42	41.02
140.50	160.77	184.42	187.21	190.90	187.49	2.54	41.81
141.00	160.80	173.24	176.03	179.76	176.32	2.56	41.93
143.33	160.94	157.96	160.86	164.74	161.17	2.66	42.62
146.00	161.10	155.05	158.07	162.13	158.45	2.77	43.41
146.14	161.11	155.05	158.08	162.14	158.40	2.78	43.46
149.03	161.28	158.17	161.31	165.56	161.66	2.90	44.32

150.99	161.39	166.79	170.01	174.40	170.37	2.98	44.90
152.01	161.45	186.29	189.55	194.01	189.93	3.03	45.20
155.06	161.62	158.38	161.77	166.43	162.17	3.16	46.11
156.00	161.68	156.79	160.22	164.93	160.62	3.20	46.39
158.20	161.80	155.47	150.00	163.86	159.42	3.29	47.04
160.99	161.95	157.74	161.38	166.43	161.82	3.41	47.87
161.43	161.97	158.59	162.24	167.32	162.69	3.43	48.00
164.75	162.15	188.39	192.18	197.48	192.65	3.57	48.99
165.99	162.22	166.66	170.49	175.88	170.98	3.62	49.36
168.16	162.33	158.81	162.73	188.28	163.24	3.72	50.01
170.99	162.47	155.98	190.02	165.77	160.55	3.84	50.85
171.67	162.51	155.90	159.97	165.77	160.51	3.88	51.05
175.26	162.69	158.98	183.23	169.30	163.79	4.05	52.12
176.00	162.72	160.60	164.88	171.01	165.46	4.09	52.33
178.96	162.87	190.65	195.08	201.43	195.68	4.23	53.22
180.99	162.97	163.83	168.35	174.84	168.96	4.33	53.82
182.75	163.05	159.13	163.74	170.38	164.37	4.42	54.34
185.99	163.20	156.27	161.02	167.97	161.71	4.60	55.31
186.65	163.23	156.21	160.99	168.00	161.69	4.64	55.50
190.65	163.42	159.32	164.27	171.64	165.02	4.85	56.69
191.00	163.43	159.95	171.93	172.33	165.68	4.87	56.80
194.75	163.60	192.65	197.86	205.62	198.65	5.10	57.91
195.99	163.66	168.98	174.30	182.20	175.10	5.20	58.28
198.96	163.79	159.24	164.82	173.08	165.65	5.44	59.16
200.99	163.87	156.95	162.71	171.21	163.57	5.61	59.77
203.28	163.97	156.12	162.10	170.92	162.99	5.82	60.45
205.98	164.09	157.15	163.33	172.47	164.25	6.02	61.25
207.71	164.16	159.19	165.41	174.58	166.33	6.05	61.76
211.00	164.30	169.61	175.97	185.22	176.87	6.14	62.74
212.27	164.35	190.57	198.98	206.26	197.88	6.17	63.12
216.00	164.50	161.12	167.66	177.03	168.54	6.25	64.23
216.97	164.54	159.54	166.11	175.50	166.99	6.27	64.52
221.00	164.70	156.89	163.58	173.06	164.45	6.35	65.72
221.85	164.73	156.92	163.60	173.10	164.48	6.36	65.97
225.28	164.87	158.54	165.35	174.96	166.22	6.45	66.99
226.00	164.89	159.22	166.07	175.70	166.94	6.47	67.20
227.10	164.94	160.54	167.45	177.11	168.31	6.50	67.53
228.26	164.98	162.28	169.25	178.94	170.10	6.54	67.87
229.06	165.01	163.70	170.71	180.42	171.55	6.56	68.11
229.67	165.03	164.82	171.85	181.59	172.70	6.58	68.29
230.14	165.05	165.68	172.73	182.48	173.57	6.59	68.43
230.52	165.06	166.33	173.40	183.16	174.24	6.60	68.55
230.83	165.08	166.81	173.89	183.66	174.73	6.61	68.64
231.00	165.08	167.03	174.12	183.90	174.96	6.62	68.69
231.63	165.11	167.60	174.74	184.55	175.57	6.65	68.88
232.09	165.12	168.83	175.78	185.60	176.61	6.66	69.02
235.93	165.27	177.23	184.49	194.42	185.32	6.74	
238.00	165.34	182.04	189.52	199.62	190.34	6.89	
239.00	165.38	184.32	191.95	202.13	192.75	6.98	
240.00	165.41	186.53	194.27	204.52	195.05	7.06	
241.00	165.45	188.37	196.20	206.53	196.98	7.12	
242.00	165.49	189.97	197.86	208.27	198.65	7.17	
243.00	165.52	191.28	199.33	209.80	200.08	7.26	
244.00	165.56	192.45	200.64	211.19	201.38	7.34	



RUN NO. 9

JOHNSON & GIERHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA h: 0 FT

CLIMATE: CONTINENTAL, SUBTROPICAL (2)

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 320 N UNITS

SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.65	135.69	134.75	135.77	136.94	135.81	0.86	1.68
9.40	138.52	136.78	138.64	141.01	138.80	1.66	2.80
15.19	141.96	139.47	142.15	146.00	142.51	2.57	4.52
18.73	143.61	140.84	143.83	146.32	144.30	2.94	5.57
24.17	145.69	142.65	145.97	151.20	146.57	3.37	7.19
30.71	147.69	144.48	148.05	153.83	148.74	3.69	9.13
35.99	149.03	145.77	149.45	155.54	150.20	3.86	10.70
40.97	150.13	146.86	150.61	156.92	151.41	3.98	12.18
45.80	151.10	147.82	151.64	158.12	152.47	4.07	13.64
50.68	151.96	148.68	152.56	159.17	153.41	4.15	15.07
55.91	152.80	149.55	153.47	160.21	154.35	4.22	16.63
60.48	153.48	150.24	154.20	161.02	155.09	4.26	17.99
65.79	154.20	150.99	155.00	161.88	155.90	4.31	19.56
70.81	154.84	151.65	155.70	162.64	156.60	4.34	21.06
75.91	155.44	152.29	156.37	163.36	157.28	4.38	22.57
80.77	155.97	152.86	156.98	164.00	157.89	4.40	24.02
85.85	156.50	153.44	157.58	164.64	158.49	4.43	25.53
90.67	156.97	153.96	158.12	165.22	159.04	4.45	26.96
95.97	157.47	154.50	158.69	165.82	159.61	4.48	28.54
100.94	157.90	154.98	159.20	166.37	160.12	4.50	30.02
102.41	158.03	153.12	153.81	154.50	153.81	0.54	30.45
104.01	158.16	155.13	156.95	157.80	156.96	0.65	30.93
105.66	158.30	178.49	179.45	180.45	179.46	0.77	31.42
106.00	158.33	168.69	169.67	170.71	169.69	0.79	31.52
107.35	158.44	156.15	157.25	158.41	157.27	0.88	31.92
109.08	158.58	153.15	154.40	155.73	154.42	1.01	32.44
110.88	158.72	156.13	157.55	159.06	157.58	1.14	32.97
111.00	158.73	156.68	158.11	159.63	158.14	1.15	33.01
112.69	158.86	179.33	180.92	182.63	180.96	1.29	33.51
114.56	159.00	156.02	157.84	159.76	157.87	1.46	34.07
115.99	159.11	153.11	155.12	157.22	155.15	1.61	34.49
116.49	159.14	152.90	154.98	157.15	155.01	1.66	34.64
118.46	159.29	155.73	158.12	160.57	158.14	1.89	35.23
120.49	159.44	179.74	182.47	185.21	182.47	2.14	35.83
121.00	159.47	166.59	169.40	172.22	169.40	2.20	35.98
122.57	159.59	155.33	158.40	161.45	158.39	2.39	36.45
124.71	159.74	152.93	155.54	158.87	156.77	2.32	37.08
125.99	159.82	153.22	156.60	160.08	156.63	2.68	37.47
126.90	159.89	155.00	158.70	162.29	158.67	2.85	37.74
129.15	160.04	180.19	184.17	188.00	184.12	3.05	38.41
131.00	160.16	156.43	160.60	164.62	160.55	3.20	38.95
131.47	160.19	154.81	159.03	163.08	158.98	3.23	39.09
133.84	160.35	153.20	156.19	160.46	156.59	2.85	39.80
136.00	160.49	153.98	158.63	163.11	158.58	3.56	40.44
136.28	160.50	154.69	159.37	163.87	159.31	3.58	40.52
138.78	160.66	181.17	186.10	190.82	186.04	3.77	41.27
141.00	160.80	155.61	160.75	165.66	160.68	3.93	41.93
141.35	160.82	154.56	159.73	164.67	159.66	3.95	42.03
143.99	160.98	153.52	156.91	162.07	157.46	3.37	42.82
145.99	161.10	153.96	158.62	163.93	158.83	3.89	43.41
146.70	161.14	154.51	160.10	165.48	160.03	4.28	43.62

149.48	161.31	192.45	188.30	193.88	188.21	4.46	44.45
150.99	161.39	159.18	165.17	170.87	165.08	4.57	44.90
152.33	161.47	154.39	160.50	166.29	160.40	4.65	45.30
155.25	161.64	153.88	157.69	163.70	158.38	3.87	46.17
155.99	161.68	153.96	157.91	163.97	158.57	3.94	46.39
158.26	161.80	154.59	160.91	167.13	160.88	4.90	47.06
161.00	161.95	172.31	179.13	185.55	179.01	5.17	47.87
161.33	161.97	183.92	190.78	197.22	190.65	5.19	47.97
164.49	162.14	154.78	161.34	168.03	161.38	5.18	48.91
165.99	162.22	154.43	159.22	166.04	159.85	4.56	49.36
167.73	162.31	154.25	158.55	165.51	159.38	4.44	49.88
171.00	162.47	154.96	161.67	168.88	161.83	5.44	50.85
171.06	162.48	154.98	161.79	169.00	161.91	5.48	50.87
174.46	162.65	185.52	193.55	201.03	193.38	6.06	51.88
175.99	162.72	160.32	168.49	176.09	168.31	6.16	52.33
177.95	162.82	155.17	162.26	170.00	162.46	5.80	52.92
180.99	162.97	154.63	159.52	167.53	160.49	5.09	53.82
181.53	162.99	154.62	159.50	167.55	160.49	5.11	53.98
185.19	163.16	155.36	162.76	171.14	163.07	6.17	55.07
185.99	163.20	155.57	164.56	173.02	164.40	6.82	55.31
188.95	163.34	186.80	196.15	204.86	195.95	7.06	56.19
190.99	163.43	158.47	167.98	176.87	167.78	7.19	56.79
192.80	163.51	155.52	163.30	172.38	163.70	6.59	57.33
195.99	163.66	154.81	160.59	170.06	161.74	6.02	58.28
196.74	163.69	154.77	160.54	170.10	161.72	6.06	58.50
200.78	163.87	155.39	163.81	173.96	164.35	7.27	59.70
201.00	163.88	155.45	164.21	174.39	164.65	7.41	59.77
204.93	164.04	183.89	194.80	205.13	194.62	8.29	60.94
206.00	164.09	164.22	175.22	185.58	175.02	8.35	61.26
209.21	164.22	155.73	164.44	174.91	164.99	7.50	62.21
211.00	164.30	155.42	162.57	173.09	163.62	6.95	62.74
213.85	164.41	155.36	161.90	172.50	163.17	6.76	63.53
216.00	164.50	155.05	162.95	173.62	164.06	6.99	64.23
216.78	164.53	156.11	163.64	174.33	164.63	7.16	64.46
218.44	164.60	156.76	165.73	176.47	166.28	7.71	64.96
219.49	164.64	157.22	167.51	178.28	167.66	8.23	65.27
220.23	164.67	157.57	168.95	179.74	168.77	8.66	65.49
220.78	164.69	157.98	170.08	180.88	169.67	8.95	65.65
221.00	164.70	158.40	170.51	181.32	170.10	8.96	65.72
221.22	164.71	158.81	170.94	181.76	170.53	8.97	65.78
221.57	164.72	159.42	171.58	182.41	171.17	8.99	65.80
221.86	164.73	159.87	172.05	182.90	171.64	9.00	65.97
222.53	164.76	160.57	172.85	183.73	172.41	9.05	66.19
223.01	164.78	161.60	173.90	184.80	173.46	9.07	66.32
225.90	164.89	168.47	180.94	191.91	180.48	9.16	67.17
226.58	164.92	170.07	182.60	193.50	182.12	9.19	
229.00	165.01	178.67	191.40	202.44	190.87	9.29	
230.00	165.05	182.24	195.04	206.10	194.50	9.33	
231.00	165.08	185.78	198.66	209.75	198.10	9.37	
232.00	165.12	187.64	200.57	211.70	200.01	9.41	
233.00	165.16	189.25	202.24	213.40	201.67	9.44	
234.00	165.19	190.68	203.73	214.92	203.15	9.48	

RUN NO. 10

JOHNSON & GIERHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA: 0 FT

CLIMATE: MARITIME SUBTROPICAL (3)

SURFACE REFLECTION LOBBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

ORST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 370 N-UNITS

SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.61	135.66	134.71	135.75	136.93	135.79	0.87	1.67
9.47	138.57	136.78	138.69	141.15	138.86	1.71	2.82
15.06	141.90	139.38	142.08	145.98	142.45	2.59	4.48
18.71	143.60	140.81	143.83	148.39	144.31	2.98	5.56
24.47	145.79	142.72	146.08	151.40	146.69	3.42	7.28
30.66	147.67	144.46	148.04	153.87	148.74	3.72	9.12
35.91	149.01	145.75	149.44	155.57	150.20	3.88	10.68
40.87	150.11	146.84	150.61	156.94	151.41	3.99	12.15
45.99	151.12	147.84	151.68	158.19	152.51	4.09	13.68
50.67	151.95	148.69	152.57	159.21	153.43	4.16	15.07
55.77	152.78	149.53	153.46	160.22	154.34	4.23	16.58
60.46	153.47	150.24	154.21	161.05	155.11	4.27	17.98
65.95	154.22	151.02	155.04	161.93	155.93	4.32	19.61
70.81	154.84	151.66	155.72	162.66	156.62	4.35	21.06
75.84	155.43	152.29	156.38	163.37	157.28	4.38	22.55
80.78	155.97	152.88	156.99	164.02	157.90	4.41	24.02
85.79	156.50	153.44	157.58	164.65	158.50	4.43	25.51
90.65	156.97	153.96	158.13	165.23	159.05	4.46	26.96
96.00	157.47	154.51	158.70	165.84	159.62	4.48	28.55
100.94	157.90	154.99	159.21	166.38	160.13	4.50	30.02
102.36	158.02	153.14	153.80	154.51	153.82	0.53	30.44
104.04	158.17	156.16	156.95	157.80	156.97	0.64	30.94
105.77	158.31	178.54	179.46	180.47	179.49	0.75	31.45
106.00	158.33	171.85	172.79	173.81	172.82	0.77	31.52
107.54	158.45	156.21	157.26	158.42	157.29	0.87	31.98
109.36	158.60	153.23	154.42	155.74	151.46	0.98	32.52
111.00	158.73	155.46	156.77	158.24	156.82	1.09	33.01
111.24	158.74	156.24	157.57	159.06	157.62	1.10	33.08
113.16	158.89	179.47	180.95	182.62	181.01	1.23	33.65
115.15	159.04	156.22	157.87	159.74	157.94	1.38	34.24
115.99	159.11	154.13	155.86	157.81	155.93	1.44	34.49
117.18	159.20	153.17	155.01	157.09	155.08	1.53	34.85
119.28	159.35	156.10	158.15	160.46	158.23	1.71	35.47
120.99	159.47	168.75	170.97	173.49	171.06	1.85	35.98
121.43	159.50	180.22	182.49	185.06	182.59	1.89	36.11
123.65	159.66	155.90	150.42	161.24	158.51	2.09	36.77
125.93	159.82	152.93	155.56	158.62	155.69	2.22	37.45
126.00	159.82	152.93	155.57	158.63	155.70	2.23	37.47
128.28	159.98	155.73	158.72	162.00	158.81	2.45	38.15
130.70	160.14	180.99	184.19	187.70	184.29	2.62	38.86
131.00	160.16	172.34	175.57	179.10	175.66	2.64	38.95
133.18	160.31	155.67	159.04	162.76	159.15	2.77	39.60
135.74	160.47	153.18	156.21	160.13	156.49	2.73	40.36
136.00	160.49	153.19	156.25	160.20	156.53	2.74	40.44
138.37	160.64	155.71	159.39	163.52	159.53	3.05	41.15
141.00	160.80	180.65	184.46	188.79	184.62	3.18	41.93
141.08	160.80	182.33	186.14	190.48	186.30	3.19	41.95
143.86	160.97	155.72	159.75	164.30	159.91	3.35	42.78
146.00	161.10	153.52	157.06	161.76	157.42	3.23	43.41
146.73	161.15	153.49	156.94	161.68	157.34	3.22	43.63
149.68	161.32	155.72	160.13	165.08	160.33	3.66	44.51

150.93	161.39	160.07	164.55	169.59	164.72	3.72	44.90
152.71	161.49	183.78	188.35	193.50	188.53	3.80	45.41
155.83	161.67	155.82	160.53	165.89	160.73	3.94	46.34
156.00	161.68	155.48	160.19	165.57	160.40	3.94	46.39
159.04	161.84	153.83	157.72	163.30	158.25	3.72	47.29
160.99	161.95	154.16	158.82	164.53	159.15	4.06	47.87
162.34	162.02	155.83	160.94	166.73	161.15	4.26	48.27
165.74	162.20	185.53	190.85	196.87	191.07	4.43	49.28
166.00	162.22	176.71	182.05	186.09	182.27	4.45	49.36
169.23	162.38	155.86	161.35	167.61	161.59	4.59	50.32
170.99	162.47	154.31	159.14	165.53	159.63	4.40	50.85
172.81	162.56	154.14	158.54	165.06	156.20	4.29	51.39
175.99	162.72	155.09	160.90	167.65	161.19	4.91	52.33
176.50	162.75	155.90	161.76	168.55	162.05	4.94	52.48
180.29	162.93	187.48	193.60	200.66	193.89	5.15	53.61
180.99	162.97	169.62	175.79	182.90	176.08	5.19	53.82
184.18	163.12	155.87	162.19	169.57	162.52	5.36	54.77
185.99	163.20	154.58	160.10	167.64	160.73	5.12	55.31
188.17	163.30	154.38	159.40	167.14	160.25	5.02	55.96
191.00	163.43	154.76	160.91	168.89	161.48	5.54	56.79
192.28	163.49	155.85	162.64	170.74	163.05	5.82	57.18
195.99	163.66	173.43	180.47	188.90	180.90	6.05	58.28
196.49	163.68	189.16	196.25	204.73	196.68	6.09	58.43
200.82	163.87	155.72	163.12	172.06	163.60	6.40	59.72
201.00	163.88	155.44	162.85	171.82	163.34	6.41	59.77
205.26	164.06	154.20	160.36	169.87	161.41	6.17	61.04
205.99	164.09	154.19	160.41	170.09	161.52	6.26	61.25
209.82	164.25	155.48	163.64	173.37	164.13	7.00	62.39
210.99	164.30	157.63	165.84	175.59	166.32	7.02	62.74
214.51	164.44	187.03	195.34	205.16	195.81	7.09	63.79
218.00	164.50	184.96	173.30	183.15	173.77	7.11	64.23
219.35	164.63	155.67	164.23	174.17	164.66	7.24	65.23
221.00	164.70	155.04	162.59	172.57	163.35	6.87	65.72
224.38	164.83	154.91	161.64	171.71	162.68	6.61	66.72
226.00	164.89	155.12	162.09	172.19	163.07	6.71	67.20
227.91	164.97	155.58	163.34	173.49	164.08	7.02	67.77
229.78	165.04	156.45	165.41	175.61	165.80	7.49	68.33
230.96	165.08	158.12	167.20	177.42	167.55	7.54	68.68
231.00	165.08	158.18	167.25	177.48	167.61	7.55	68.69
231.79	165.11	159.51	168.64	178.89	168.99	7.58	68.93
232.41	165.14	160.60	169.79	180.05	170.13	7.60	69.11
232.89	165.15	161.45	170.67	180.95	171.00	7.62	69.25
233.29	165.17	162.09	171.33	181.62	171.66	7.63	69.37
233.61	165.18	162.56	171.83	182.13	172.15	7.65	69.47
234.43	165.21	163.32	172.66	183.01	172.98	7.69	69.71
234.90	165.23	164.33	173.69	184.04	174.00	7.70	69.85
235.99	165.27	166.70	176.11	186.48	176.41	7.73	70.18
238.83	165.37	172.32	182.19	192.78	182.42	8.00	
241.00	165.45	176.24	186.34	197.11	186.55	8.16	
242.00	165.49	177.86	188.23	199.10	188.39	8.30	
243.00	165.52	179.90	190.43	201.39	190.56	8.40	
244.00	165.56	181.64	192.26	203.31	192.40	8.47	
245.00	165.59	183.03	193.84	204.98	193.94	8.57	
246.00	165.63	184.20	195.23	206.46	195.29	8.70	
247.00	165.66	185.32	196.48	207.79	196.53	8.78	

RUN NO. 11

JOHNSON & GIERHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA h: 0 FT

CLIMATE: DESERT (4)

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT. DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.67	135.70	134.77	135.79	136.94	135.83	0.85	1.68
9.37	138.50	136.79	138.62	140.95	138.78	1.63	2.79
15.27	142.00	139.51	142.18	146.01	142.54	2.55	4.54
18.75	143.62	140.86	143.84	148.30	144.30	2.93	5.58
24.05	145.65	142.63	145.93	151.11	146.51	3.34	7.15
30.74	147.70	144.50	148.06	153.82	148.74	3.68	9.14
35.94	149.02	145.77	149.44	155.51	150.19	3.85	10.69
40.98	150.14	146.87	150.62	156.91	151.41	3.97	12.19
45.84	151.10	147.82	151.64	158.10	152.47	4.06	13.63
50.69	151.96	148.70	152.57	159.17	153.42	4.14	15.07
55.98	152.81	149.57	153.49	160.22	154.37	4.21	16.65
60.50	153.48	150.26	154.22	161.03	155.11	4.26	17.99
65.74	154.20	151.01	155.01	161.89	155.91	4.30	19.55
70.82	154.84	151.68	155.72	162.66	156.63	4.34	21.06
75.93	155.44	152.32	156.40	163.39	157.31	4.38	22.58
80.77	155.97	152.90	157.01	164.04	157.92	4.40	24.02
85.87	156.50	153.49	157.63	164.69	158.54	4.43	25.54
90.69	156.98	154.02	158.18	165.28	159.10	4.45	26.97
95.98	157.47	154.58	158.77	165.90	159.69	4.48	28.54
100.95	157.90	155.08	159.30	166.47	160.22	4.51	30.02
102.17	158.01	153.23	159.89	164.58	159.90	0.53	30.38
103.73	158.14	156.25	157.04	157.88	157.05	0.64	30.85
105.33	158.27	178.62	179.55	180.54	179.57	0.75	31.32
106.00	158.33	163.22	164.22	165.28	164.24	0.80	31.52
106.97	158.41	156.29	157.36	158.52	157.39	0.87	31.81
108.65	158.54	153.31	154.53	155.86	154.56	0.99	32.31
110.38	158.68	156.32	157.70	159.21	157.74	1.13	32.82
111.00	158.73	159.55	160.99	162.58	161.04	1.18	33.01
112.14	158.81	179.54	181.10	182.82	181.15	1.28	33.35
113.95	158.95	156.29	158.06	160.01	158.12	1.46	33.89
115.81	159.09	153.22	155.25	157.47	155.31	1.66	34.44
116.00	159.11	153.24	155.30	157.54	155.36	1.68	34.49
117.72	159.24	155.12	158.45	160.97	158.51	1.89	35.00
119.67	159.38	180.18	182.86	185.70	182.91	2.15	35.59
121.00	159.47	158.86	161.77	164.83	161.82	2.33	35.98
121.67	159.52	155.82	158.85	162.01	158.89	2.42	36.18
123.73	159.67	153.47	156.04	159.50	156.32	2.36	36.79
125.83	159.81	155.57	159.23	162.97	159.25	2.89	37.42
126.00	159.82	156.13	159.80	163.56	159.93	2.90	37.47
127.99	159.96	180.78	184.71	188.71	184.73	3.10	38.06
130.21	160.11	155.42	159.59	163.85	159.62	3.30	38.72
130.99	160.16	154.05	157.84	162.18	158.01	3.18	38.95
132.48	160.26	153.81	156.77	161.27	157.25	2.94	39.39
134.81	160.41	155.26	159.96	164.70	159.97	3.69	40.09
135.99	160.49	160.50	165.33	170.18	165.34	3.78	40.44
137.20	160.56	181.74	186.64	191.66	186.70	3.87	40.80
139.65	160.72	155.14	160.33	165.53	160.33	4.06	41.53
140.99	160.80	154.29	158.01	163.33	158.51	3.55	41.93
142.16	160.87	154.15	157.51	162.94	159.16	3.47	42.27
144.74	161.03	155.04	160.71	166.35	160.70	4.42	43.04
145.99	161.10	159.98	165.79	171.53	165.77	4.51	43.41

147.37	151.18	182.95	188.89	194.74	188.86	4.61	43.82
150.08	161.34	155.05	161.11	167.17	161.11	4.74	44.63
151.00	161.39	154.81	159.42	165.56	159.90	4.22	44.90
152.85	161.50	154.54	158.31	164.62	159.10	3.98	45.45
155.70	161.66	155.26	161.52	168.09	161.62	5.01	46.30
156.00	161.68	155.58	162.32	168.91	162.28	5.21	46.59
158.61	161.82	184.37	191.37	198.19	191.31	5.40	47.16
160.99	161.95	156.28	163.50	170.52	163.44	5.66	47.87
161.59	161.98	155.47	161.96	169.03	162.14	5.30	48.05
164.65	162.14	164.96	169.18	166.50	160.14	4.57	48.96
165.99	162.22	155.15	159.80	167.22	160.67	4.76	49.36
167.77	162.31	155.69	162.43	170.00	162.69	5.69	49.89
170.98	162.47	185.97	194.14	201.96	194.03	6.25	50.84
171.00	162.47	185.68	193.86	201.68	193.75	6.25	50.85
174.26	162.64	155.92	162.93	171.05	163.27	5.91	51.82
175.99	162.72	155.53	160.69	168.96	161.66	5.30	52.33
177.62	162.80	155.39	160.18	188.62	161.32	5.24	52.92
181.00	162.97	156.14	163.35	172.13	163.84	6.26	53.82
181.05	162.97	156.15	163.46	172.25	163.92	6.30	53.84
184.57	163.14	187.29	196.71	205.85	196.62	7.25	54.88
185.99	163.20	161.58	171.11	180.38	171.03	7.35	55.31
188.17	163.30	156.40	164.04	173.52	164.61	6.70	55.96
190.99	163.43	155.81	161.42	171.21	162.72	6.10	56.79
191.86	163.47	155.76	161.34	171.25	162.69	6.14	57.05
195.63	163.64	156.49	164.69	175.09	165.38	7.28	58.17
196.00	163.66	156.60	165.42	175.89	165.94	7.54	58.28
199.51	163.81	184.40	195.34	206.19	195.31	8.51	59.33
201.00	163.88	161.83	172.85	183.75	172.81	8.56	59.77
203.50	163.98	156.88	165.48	176.46	166.22	7.67	60.51
208.00	164.09	156.53	163.20	174.27	164.57	7.01	61.26
207.64	164.16	156.60	163.04	174.15	164.49	6.94	61.74
210.56	164.28	157.44	164.85	176.08	166.04	7.34	62.61
211.00	164.30	157.62	165.36	176.61	166.46	7.46	62.74
212.12	164.34	158.14	166.98	178.28	167.75	7.89	63.08
213.10	164.38	158.64	168.78	180.13	169.16	8.40	63.37
213.80	164.41	159.01	170.22	181.80	170.27	8.83	63.57
214.32	164.43	159.39	171.34	182.75	171.17	9.13	63.73
214.72	164.45	160.22	172.20	183.63	172.03	9.16	63.85
215.05	164.46	160.83	172.84	184.28	172.66	9.16	63.95
215.32	164.47	161.23	173.31	184.80	173.13	9.21	64.03
216.00	164.50	161.98	174.10	185.61	173.91	9.23	64.23
216.00	164.50	161.98	174.10	185.61	173.91	9.23	64.23
216.41	164.52	163.03	175.17	186.69	174.98	9.24	64.35
219.79	164.65	171.65	183.95	195.59	183.74	9.35	
222.00	164.74	180.00	192.45	204.15	192.22	9.44	
223.00	164.78	183.78	196.30	208.02	196.05	9.47	
224.00	164.82	187.57	200.15	211.90	199.89	9.50	
225.00	164.85	191.37	204.00	215.77	203.73	9.54	
226.00	164.89	194.94	207.64	219.44	207.36	9.57	
227.00	164.93	196.46	209.21	221.06	208.93	9.61	

RUN NO. 12

JOHNSON & GIERHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA: 0 FT

CLIMATE: CONTINENTAL TEMPERATE (6)

SURFACE REFLECTION LOBBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 326 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.65	135.69	134.75	135.77	136.94	135.81	0.86	1.68
9.40	138.52	136.78	138.64	141.01	138.80	1.66	2.80
15.19	141.96	139.47	142.15	146.00	142.51	2.57	4.52
18.73	143.61	140.84	143.83	148.32	144.30	2.94	5.57
24.17	145.69	142.65	145.97	151.20	146.57	3.37	7.19
30.71	147.69	144.48	148.05	153.83	148.74	3.69	9.13
35.99	149.03	145.77	149.45	155.54	150.20	3.86	10.70
40.97	150.13	146.86	150.61	156.92	151.41	3.98	12.18
45.88	151.10	147.82	151.64	158.12	152.47	4.07	13.64
50.68	151.96	148.68	152.55	159.17	153.41	4.15	15.07
55.91	152.80	149.55	153.47	160.21	154.35	4.22	16.63
60.48	153.46	150.24	154.20	161.02	155.09	4.26	17.99
65.79	154.20	150.99	155.00	161.88	155.89	4.31	19.56
70.81	154.84	151.65	155.70	162.64	156.60	4.34	21.06
75.91	155.44	152.29	156.37	163.35	157.28	4.38	22.57
80.77	155.97	152.86	156.97	164.00	157.88	4.40	24.02
85.85	156.50	153.43	157.58	164.64	158.49	4.43	25.53
90.67	156.87	153.95	158.12	165.22	159.03	4.45	26.96
95.97	157.47	154.49	158.69	165.82	159.60	4.48	28.54
100.94	157.90	154.96	159.20	166.37	160.11	4.51	30.02
102.41	158.03	153.06	153.80	154.50	153.79	0.56	30.45
104.01	158.16	156.07	156.94	157.79	156.93	0.57	30.93
104.66	158.30	178.42	179.44	180.44	179.44	0.79	31.42
106.00	158.33	168.62	169.66	170.70	169.66	0.81	31.52
107.35	158.44	156.07	157.24	158.40	157.24	0.91	31.92
109.08	158.58	153.07	154.39	155.72	154.39	1.04	32.44
110.86	158.72	156.04	157.54	159.05	157.54	1.17	32.97
111.00	158.73	156.59	158.10	159.62	158.10	1.19	33.01
112.65	158.86	179.20	180.91	182.61	180.91	1.33	33.51
114.56	159.00	155.86	157.83	159.74	157.81	1.52	34.07
115.99	159.11	152.91	155.10	157.20	155.07	1.68	34.49
116.49	159.14	152.76	154.96	157.13	154.95	1.70	34.64
118.46	159.29	155.46	158.10	160.54	158.04	1.99	35.23
120.49	159.44	179.40	182.44	185.18	182.35	2.26	35.83
121.00	159.47	166.24	169.37	172.18	169.27	2.32	35.98
122.57	159.59	154.96	158.37	161.41	158.26	2.52	36.45
124.71	159.74	152.92	155.52	158.83	155.74	2.31	37.08
125.99	159.82	153.19	156.57	160.03	156.59	2.67	37.47
126.90	159.89	154.65	158.67	162.24	158.53	2.97	37.74
129.15	160.04	179.78	184.14	187.95	183.97	3.19	38.41
131.00	160.16	155.99	160.57	164.56	160.39	3.35	38.95
131.47	160.19	154.36	158.99	163.03	158.81	3.39	39.09
133.84	160.35	153.17	156.16	160.40	156.55	2.84	39.80
136.00	160.49	153.71	158.60	163.02	158.46	3.64	40.44
136.28	160.50	154.24	159.34	163.78	159.14	3.73	40.52
138.78	160.65	180.78	186.08	190.74	185.88	3.89	41.27
141.00	160.80	155.27	160.72	165.57	160.53	4.02	41.93
141.35	160.82	154.23	159.70	164.50	159.52	4.04	42.03
143.99	160.98	153.49	156.88	161.97	157.41	3.34	42.82
145.99	161.10	153.95	158.59	163.84	158.78	3.86	43.41
146.70	161.14	154.18	160.08	165.38	159.89	4.38	43.62

149.48	161.31	182.10	188.27	193.78	188.06	4.57	44.45
150.99	161.39	158.87	165.15	170.77	164.95	4.65	44.90
152.33	161.47	154.38	160.48	166.19	160.36	4.62	45.30
155.25	161.64	153.86	157.68	163.60	158.33	3.83	46.17
155.99	161.68	153.94	157.89	163.87	158.53	3.91	46.39
158.26	161.80	154.58	160.89	167.02	160.83	4.86	47.06
161.00	161.95	172.13	179.12	185.44	178.91	5.20	47.87
161.33	161.97	183.75	190.77	197.12	190.56	5.22	47.97
164.49	162.14	154.77	161.33	167.90	161.33	5.13	48.91
165.99	162.22	154.42	159.21	165.89	159.80	4.50	49.36
167.73	162.31	154.24	158.54	165.34	159.32	4.38	49.88
171.00	162.47	154.96	161.66	168.72	161.77	5.38	50.85
171.06	162.48	154.97	161.78	168.84	161.86	5.42	50.87
174.46	162.65	185.66	193.54	200.86	193.37	5.94	51.88
175.99	162.72	180.47	168.49	175.92	158.31	6.04	52.33
177.95	162.82	155.17	162.26	169.84	162.41	5.73	52.92
180.99	162.97	154.63	159.52	167.37	160.44	5.02	53.82
181.53	162.99	154.62	159.50	167.39	160.44	5.04	53.98
185.19	163.16	155.36	162.76	170.99	163.02	6.11	55.07
185.99	163.20	155.94	164.56	172.86	164.46	6.61	55.31
188.95	163.34	187.33	196.15	204.71	196.07	6.79	56.19
190.99	163.43	158.97	167.98	176.72	167.90	6.93	56.79
192.80	163.51	155.52	163.30	172.23	163.66	6.53	57.33
195.99	163.66	154.82	160.59	169.88	161.69	5.94	58.28
196.74	163.69	154.77	160.55	169.92	161.67	5.98	58.50
200.78	163.87	155.40	163.82	173.76	164.29	7.18	59.70
201.00	163.88	155.46	164.21	174.18	164.59	7.32	59.77
204.93	164.04	184.85	194.81	204.90	194.85	7.83	60.94
206.00	164.09	165.20	175.23	185.36	175.26	7.87	61.26
209.21	164.22	155.75	164.46	174.69	164.93	7.41	62.21
211.00	164.30	155.44	162.59	172.87	163.57	6.85	62.74
213.65	164.41	155.38	161.02	172.28	163.12	6.86	63.53
216.00	164.50	155.87	162.98	173.41	164.01	6.89	64.23
216.78	164.53	156.13	163.67	174.12	164.58	7.06	64.46
218.44	164.60	156.78	165.76	176.26	166.23	7.62	64.96
219.49	164.64	157.25	167.54	178.07	167.62	8.14	65.27
220.23	164.67	158.40	168.98	179.53	168.97	8.25	65.49
220.78	164.69	159.51	170.10	180.68	170.10	8.27	65.65
221.00	164.70	159.94	170.54	181.11	170.53	8.27	65.72
221.22	164.71	160.36	170.96	181.55	170.96	8.28	65.78
221.57	164.72	160.99	171.61	182.21	171.60	8.29	65.89
221.86	164.73	161.45	172.06	182.69	172.08	8.30	65.97
222.58	164.76	162.16	172.88	183.53	172.85	8.35	66.19
223.01	164.78	163.18	173.93	184.59	173.90	8.36	66.32
225.90	164.89	170.07	180.97	191.71	180.92	8.45	67.17
226.58	164.92	171.70	182.63	193.33	182.57	8.47	
229.00	165.01	180.41	191.43	202.24	191.36	8.53	
230.00	165.05	184.01	195.07	205.90	195.00	8.55	
231.00	165.08	187.60	198.69	209.54	198.61	8.57	
232.00	165.12	189.48	200.60	211.48	200.53	8.59	
233.00	165.16	191.13	202.28	213.18	202.20	8.61	
234.00	165.19	192.59	203.76	214.68	203.68	8.63	



**RUN NO. 13**

**JOHNSON & GIERHART CLIMATE RUN DATA**

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA: 0 FT

CLIMATE: MARITIME TEMPERATE OVERLAND (?)

SURFACE REFLECTION LOSS: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 320 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

**ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)**

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.84	132.54	132.70	132.87	132.70	0.13	0.30
5.65	135.69	134.75	135.77	136.94	135.81	0.86	1.68
9.40	138.52	136.78	138.64	141.01	138.80	1.66	2.80
15.19	141.96	139.47	142.15	146.00	142.51	2.57	4.52
18.73	143.61	140.84	143.83	148.32	144.30	2.94	5.57
24.17	145.69	142.65	145.97	151.20	146.57	3.37	7.19
30.71	147.69	144.48	148.05	153.83	148.74	3.69	9.13
35.99	149.03	145.77	149.45	155.54	150.20	3.86	10.70
40.97	150.13	146.86	150.62	156.92	151.41	3.98	12.18
45.88	151.10	147.82	151.64	158.12	152.47	4.07	13.64
50.68	151.96	148.68	152.56	159.17	153.41	4.15	15.07
55.91	152.76	149.55	153.47	160.21	154.35	4.22	16.63
60.48	153.44	150.24	154.20	161.02	155.10	4.26	17.99
65.79	154.20	150.99	155.03	161.89	155.90	4.31	19.56
70.81	154.84	151.66	155.79	162.64	156.61	4.24	21.06
75.91	155.44	152.29	156.38	163.36	157.28	4.38	22.57
80.77	155.97	152.87	156.96	164.01	157.89	4.40	24.02
85.85	156.50	153.45	157.59	164.65	158.50	4.43	25.53
90.67	156.97	153.97	158.13	165.23	159.05	4.45	26.96
95.67	157.47	154.52	158.71	165.84	159.63	4.48	28.54
100.24	157.90	155.01	159.25	166.39	160.15	4.50	30.02
102.41	158.03	155.22	159.83	164.48	160.84	0.49	30.45
104.01	158.16	156.23	156.98	157.77	156.99	0.60	30.93
105.65	158.30	178.61	179.48	180.43	179.51	0.71	31.42
106.00	158.33	168.81	169.71	170.68	169.73	0.73	31.52
107.35	158.44	156.29	157.29	158.39	157.32	0.82	31.92
109.08	158.58	153.32	154.45	155.70	154.49	0.93	32.44
110.86	158.72	156.35	157.60	159.02	157.65	1.04	32.97
111.00	158.73	156.90	158.17	159.59	156.22	1.05	33.01
112.69	158.86	179.60	180.99	187.57	181.05	1.16	33.51
114.56	159.00	156.39	157.93	159.65	157.99	1.29	34.07
116.99	159.11	153.56	155.22	157.11	155.29	1.39	34.49
116.49	159.14	153.39	155.09	157.03	155.16	1.42	34.64
118.46	159.29	156.39	158.25	160.40	158.34	1.57	35.23
120.49	159.44	180.55	182.62	184.99	182.71	1.73	35.83
121.00	159.47	167.44	169.56	171.98	169.65	1.78	35.98
122.57	159.55	156.31	158.59	161.16	158.68	1.90	36.45
124.71	159.74	153.28	155.76	159.54	155.85	2.06	37.08
125.99	159.82	154.23	156.83	159.73	156.92	2.15	37.47
126.90	159.89	156.27	158.94	161.93	159.04	2.21	37.74
129.15	160.04	181.58	184.43	187.61	184.53	2.36	38.41
131.00	160.16	157.90	160.68	164.22	160.99	2.47	38.95
131.47	160.19	156.30	159.31	162.68	159.42	2.49	39.09
133.84	160.35	153.51	156.49	160.05	156.67	2.56	39.80
136.00	160.49	155.67	158.95	162.68	159.09	2.74	40.44
136.28	160.50	156.39	159.69	163.44	159.83	2.76	40.52
138.78	160.66	183.02	186.44	190.38	186.60	2.88	41.27
141.00	160.80	157.57	161.10	165.21	161.28	2.99	41.93
141.35	160.82	156.53	160.09	164.22	160.77	3.00	42.03
143.99	160.96	153.89	157.29	161.61	157.58	3.02	42.82
145.99	161.10	155.18	159.01	163.48	159.21	3.24	43.41
146.70	161.14	156.63	160.50	165.02	160.70	3.28	43.62

149.48	161.31	159.90	163.49	168.21	163.84	3.26	44.45
150.99	161.39	159.96	163.61	168.44	163.98	3.32	44.90
152.33	161.47	160.02	163.72	168.64	164.10	3.38	45.30
155.25	161.64	160.14	163.95	169.08	164.35	3.50	46.17
155.99	161.68	160.17	164.01	169.19	164.43	3.54	46.39
158.26	161.80	160.26	164.19	169.52	164.63	3.69	47.06
161.00	161.95	160.37	164.41	169.92	164.87	3.75	47.87
161.33	161.97	160.39	164.44	169.97	164.90	3.76	47.97
164.49	162.14	160.51	164.68	170.47	165.19	3.91	48.91
165.99	162.22	160.57	164.80	170.70	165.32	3.98	49.36
167.73	162.31	160.64	164.94	170.97	165.48	4.06	49.88
171.00	162.47	160.76	165.19	171.48	165.77	4.21	50.85
171.06	162.48	160.76	165.20	171.49	165.78	4.21	50.87
174.46	162.65	160.89	165.46	172.02	166.08	4.37	51.88
175.99	162.72	160.95	165.58	172.25	166.22	4.44	52.33
177.95	162.82	161.02	165.73	172.55	166.39	4.53	52.92
180.99	162.97	161.12	165.97	173.06	166.66	4.69	53.82
181.53	162.99	161.13	166.01	173.15	166.71	4.72	53.98
185.19	163.16	161.25	166.29	173.77	167.05	4.93	55.07
185.99	163.20	161.27	166.35	173.91	167.13	4.97	55.31
188.95	163.34	161.36	166.59	174.44	167.41	5.15	56.19
190.99	163.43	161.42	166.75	174.80	167.60	5.27	56.79
192.80	163.51	161.42	166.88	175.14	167.76	5.40	57.33
195.99	163.66	161.38	167.09	175.75	168.01	5.66	59.28
196.74	163.69	161.36	167.14	175.89	168.07	5.72	58.50
200.78	163.87	161.25	167.49	176.83	168.46	6.13	59.70
201.00	163.88	161.24	167.52	176.89	168.48	6.16	59.77
204.93	164.04	161.42	168.05	177.54	168.94	6.33	60.94
206.00	164.09	161.45	168.17	177.68	169.04	6.37	61.26
209.21	164.22	161.35	168.13	177.71	169.00	6.42	62.21
211.00	164.30	161.17	167.82	177.45	168.75	6.41	62.74
213.65	164.41	160.80	167.34	177.08	168.34	6.40	63.53
216.00	164.50	160.56	167.43	177.25	168.35	6.55	64.23
216.78	164.53	160.52	167.66	177.49	168.50	6.56	64.46
218.44	164.60	160.49	168.53	178.42	169.11	7.02	64.96
219.49	164.64	161.25	169.38	179.30	169.94	7.07	65.27
220.23	164.67	161.90	170.08	180.03	170.63	7.09	65.49
220.78	164.69	162.41	170.63	180.60	171.18	7.12	65.65
221.00	164.70	162.60	170.85	180.82	171.39	7.13	65.72
221.22	164.71	162.80	171.07	181.05	171.60	7.14	65.78
221.57	164.72	163.10	171.40	181.39	171.93	7.16	65.89
221.86	164.73	163.33	171.66	181.67	172.18	7.17	65.97
221.88	164.73	163.35	171.68	181.69	172.20	7.17	65.98
223.01	164.78	166.65	175.09	185.14	175.59	7.23	66.32
225.82	164.89	174.93	183.52	193.66	184.01	7.32	
228.00	164.97	182.84	191.53	201.73	192.00	7.38	
229.00	165.01	186.48	195.21	205.43	195.88	7.41	
230.00	165.05	190.12	198.89	209.13	199.35	7.43	
231.00	165.08	192.86	201.46	211.73	201.92	7.46	
232.00	165.12	194.35	203.18	213.49	203.64	7.49	
233.00	165.16	195.85	204.71	215.06	205.17	7.51	

RUN NO. 14

JOHNSON & GIERHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA h: 0 FT

CLIMATE: MARITIME TEMPERATE OVERSEA (8)

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 320 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.65	136.69	134.75	135.77	136.94	135.81	0.86	1.68
9.40	138.52	136.78	136.64	141.01	138.80	1.66	2.80
15.19	141.95	139.47	142.15	146.00	142.51	2.57	4.52
18.73	143.61	140.84	143.83	148.32	144.30	2.94	5.57
24.17	145.69	142.65	145.97	151.20	146.57	3.37	7.19
30.71	147.69	144.48	148.05	153.83	148.74	3.69	9.13
35.99	149.03	145.77	149.45	155.54	150.20	3.86	10.70
40.97	150.13	146.86	150.61	156.02	151.41	3.98	12.18
45.88	151.10	147.82	151.64	156.12	152.47	4.07	13.64
50.88	151.96	148.68	152.55	159.17	153.41	4.15	15.07
55.91	152.80	149.54	153.46	160.21	154.34	4.22	16.63
60.48	153.48	150.24	154.20	161.02	155.09	4.26	17.99
65.79	154.20	150.99	154.99	161.88	155.89	4.31	19.58
70.81	154.84	151.65	155.70	162.63	156.60	4.34	21.06
75.91	155.44	152.28	156.37	163.35	157.27	4.38	22.57
80.77	155.97	152.86	156.97	163.99	157.88	4.40	24.02
85.85	156.50	153.43	157.57	164.63	158.48	4.43	25.53
90.67	156.97	153.95	158.11	165.21	159.03	4.45	26.96
95.97	157.47	154.49	158.68	165.81	159.59	4.48	28.54
100.94	157.90	154.96	159.18	166.35	160.10	4.50	30.02
102.41	158.03	155.12	159.76	164.44	159.78	0.52	30.45
104.01	158.16	155.13	156.93	157.73	156.93	0.63	30.93
105.66	158.30	178.50	179.42	180.38	179.43	0.74	31.42
106.00	158.33	168.60	169.64	170.64	169.66	0.76	31.52
107.35	158.44	156.16	157.22	158.33	157.23	0.85	31.92
109.08	158.58	153.17	154.36	155.04	154.39	0.97	32.44
110.98	158.72	155.16	157.51	158.05	157.54	1.09	32.97
111.00	158.73	156.71	158.07	159.53	158.10	1.10	33.01
112.69	158.86	179.36	180.88	182.49	180.91	1.22	33.51
114.56	159.00	156.07	157.78	159.59	157.81	1.38	34.07
115.99	159.11	153.17	155.05	157.02	155.08	1.50	34.49
116.49	159.14	152.06	154.91	156.93	154.93	1.55	34.64
118.46	159.29	155.62	158.04	160.29	158.05	1.75	35.23
120.49	159.44	179.86	182.37	184.87	182.37	1.96	35.83
121.00	159.47	186.72	189.30	171.66	169.29	2.01	35.98
122.57	159.59	155.50	158.29	161.04	158.28	2.16	36.45
124.71	159.74	152.83	155.42	158.42	155.55	2.19	37.08
125.99	159.82	153.30	156.47	159.60	156.46	2.46	37.47
126.90	159.89	165.32	168.57	161.80	158.56	2.53	37.74
129.15	160.04	180.50	184.03	187.49	184.02	2.71	38.41
131.00	160.16	156.78	160.46	164.10	160.45	2.86	38.95
131.47	160.19	155.15	158.88	162.57	158.37	2.90	39.09
133.84	160.35	153.05	156.04	159.94	156.32	2.70	39.80
136.00	160.49	154.35	158.47	162.57	158.46	3.21	40.44
136.28	160.50	155.06	159.21	163.33	159.20	3.23	40.52
138.78	160.66	181.61	185.94	180.29	185.95	3.39	41.27
141.00	160.80	156.11	160.57	165.12	160.60	3.52	41.93
141.35	160.82	155.07	159.16	164.13	159.59	3.54	42.03
143.99	160.98	153.34	156.73	161.53	157.17	3.22	42.82
145.99	161.10	153.79	153.43	163.40	156.54	3.75	43.41
146.70	161.14	155.08	159.82	164.94	159.93	3.85	43.62

149.48	161.31	183.02	188.10	193.35	188.16	4.03	44.45
150.99	161.39	159.79	164.98	170.34	165.03	4.12	44.90
152.33	161.47	155.02	160.29	165.77	160.36	4.20	45.30
155.25	161.64	153.67	157.48	163.21	158.08	3.76	46.17
155.99	161.68	153.74	157.70	163.49	158.27	3.83	46.39
158.26	161.80	155.10	160.68	166.68	160.81	4.53	47.06
161.00	161.95	173.14	178.90	185.14	179.05	4.69	47.87
161.33	161.97	184.75	190.54	196.82	190.69	4.72	47.97
164.49	162.14	155.01	161.08	167.64	161.23	4.93	48.91
165.99	162.22	154.16	158.95	165.65	159.54	4.51	49.36
167.73	162.31	153.96	158.26	165.12	159.06	4.40	49.88
171.00	162.47	154.92	161.34	166.49	161.57	5.30	50.85
171.06	162.46	155.04	161.46	168.62	161.69	5.31	50.87
174.46	162.65	186.63	192.19	200.67	193.48	5.49	51.88
175.99	162.72	161.39	158.12	175.75	168.40	5.62	52.33
177.95	162.82	154.97	161.87	169.70	162.16	5.76	52.92
180.99	162.97	154.21	159.10	167.26	160.12	5.16	53.82
181.53	162.99	154.19	159.07	167.29	160.11	5.18	53.98
185.19	163.16	154.97	162.29	170.93	162.70	6.24	55.07
185.99	163.20	156.73	164.08	172.31	164.51	6.29	55.31
188.95	163.34	188.07	195.63	204.67	196.09	6.50	56.19
190.99	163.43	159.68	167.44	176.70	167.90	6.66	56.79
192.80	163.51	154.95	162.74	172.23	163.27	6.76	57.53
195.99	163.66	154.23	160.01	169.96	161.31	6.22	58.28
196.74	163.69	154.18	159.96	170.01	161.29	6.26	58.60
200.73	163.87	154.79	163.21	173.91	163.92	7.49	59.70
201.00	163.88	154.98	163.61	174.34	164.26	7.58	59.77
204.93	164.04	185.23	194.17	205.12	194.80	7.78	60.94
206.00	164.09	165.59	174.59	185.59	175.21	7.82	61.26
209.21	164.22	155.07	163.79	174.94	164.55	7.78	62.21
211.00	164.30	154.75	161.90	173.14	163.18	7.25	62.74
213.65	164.41	154.67	161.21	172.62	162.73	7.11	63.53
216.00	164.50	155.14	162.24	173.80	163.63	7.37	64.23
216.78	164.53	155.39	162.92	174.53	164.19	7.54	64.46
218.44	164.60	156.02	164.99	176.70	165.85	8.10	64.96
219.49	164.64	157.08	166.77	178.54	167.42	8.40	65.27
220.23	164.67	158.48	168.20	180.01	168.85	8.43	65.49
220.78	164.68	159.58	169.31	181.17	169.97	8.45	65.65
221.00	164.70	160.00	169.74	181.61	170.40	8.46	65.72
221.22	164.71	160.41	170.17	182.05	170.83	8.47	65.78
221.57	164.72	161.04	170.81	182.71	171.47	8.48	65.89
221.86	164.73	161.49	171.28	183.21	171.95	8.50	65.97
222.58	164.76	162.22	172.06	184.06	172.73	8.55	66.19
223.01	164.78	163.26	173.11	185.13	173.78	8.56	66.32
225.90	164.89	170.14	180.12	192.29	180.80	8.87	67.17
226.68	164.92	171.72	181.77	193.97	182.44	8.71	
229.00	165.01	180.31	190.54	202.86	191.19	8.82	
230.00	165.05	183.88	194.16	206.53	194.81	8.86	
231.00	165.08	187.44	197.76	210.19	198.42	8.90	
232.00	165.12	189.30	199.66	212.13	200.32	8.93	
233.00	165.16	190.93	201.32	213.64	201.99	8.96	
234.00	165.19	192.38	202.79	215.38	203.47	9.00	

RUN NO. 15

JOHNSON & GIEKHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL  
 FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC  
 TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 301 N-UNITS

SURFACE TYPE: POOR GROUND

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA h: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

CLIMATE: CONTINENTAL ALL YEAR (0)

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.66	135.69	134.76	135.78	136.94	135.82	0.85	1.66
9.39	138.51	136.78	138.63	140.98	138.79	1.64	2.79
15.23	141.98	139.49	142.17	146.00	142.53	2.56	4.53
18.74	143.61	140.85	143.83	148.31	144.30	2.93	5.57
24.10	145.67	142.64	145.95	151.15	146.54	3.35	7.17
30.72	147.69	144.49	148.05	153.83	148.74	3.68	9.14
35.98	149.03	145.77	149.45	155.53	150.20	3.85	10.70
40.99	150.14	146.86	150.62	156.92	151.41	3.97	12.19
45.86	151.10	147.82	151.64	158.11	152.46	4.07	13.64
50.68	151.96	148.68	152.55	159.16	153.41	4.14	15.07
55.95	152.81	149.55	153.47	160.21	154.35	4.21	16.64
60.49	153.48	150.24	154.20	161.02	155.09	4.26	17.99
65.77	154.20	150.99	154.99	161.87	155.89	4.31	19.56
70.81	154.94	151.65	155.70	162.63	156.60	4.34	21.06
75.92	155.44	152.29	156.37	163.35	157.28	4.38	22.58
80.77	155.97	152.86	156.97	164.00	157.88	4.40	24.02
85.87	156.50	153.44	157.58	164.64	158.49	4.43	25.53
90.68	156.98	153.96	158.12	165.22	159.04	4.45	26.96
95.97	157.47	154.50	158.69	165.82	159.61	4.48	28.54
100.63	157.88	154.95	159.17	166.34	160.09	4.50	29.92
105.62	158.30	155.40	159.66	166.87	160.58	4.53	31.41
110.99	158.73	155.83	160.16	167.43	161.08	4.58	33.00
116.81	159.09	156.11	160.56	167.90	161.46	4.66	34.44
120.97	159.47	156.24	160.95	168.40	161.80	4.79	35.97
125.91	159.82	156.32	161.32	168.88	162.12	4.94	37.44
130.90	160.16	156.63	161.88	169.55	162.63	5.08	38.92
135.78	160.47	157.19	162.66	170.42	163.38	5.19	40.37
140.89	160.79	157.77	163.45	171.27	164.12	5.30	41.89
145.90	161.10	158.31	164.19	172.06	164.81	5.39	43.38
150.93	161.39	158.85	164.93	172.84	165.50	5.48	44.88
155.82	161.67	159.37	165.63	173.58	166.16	5.57	46.34
160.71	161.93	159.88	166.33	174.32	166.81	5.65	47.79
165.80	162.20	160.39	167.06	175.09	167.48	5.75	49.30
170.95	162.47	160.91	167.79	175.87	168.16	5.85	50.83
175.86	162.72	161.39	168.48	176.62	168.81	5.95	52.29
180.94	162.96	161.86	169.20	177.44	169.48	6.09	53.81
185.79	163.19	162.28	169.88	178.27	170.13	6.25	55.25
190.62	163.42	162.68	170.55	179.14	170.78	6.43	56.68
195.62	163.64	163.03	171.25	180.18	171.47	6.70	58.17
200.81	163.87	163.37	171.96	181.31	172.20	7.01	59.71
205.93	164.09	163.84	172.67	182.13	172.87	7.15	61.23
210.57	164.28	164.25	173.30	182.88	173.47	7.28	62.61
210.99	164.30	164.29	173.36	182.95	173.52	7.29	62.74
213.59	164.40	164.53	173.71	183.37	173.86	7.36	63.51
215.20	164.47	164.67	173.93	183.63	174.07	7.41	63.99
216.00	164.50	164.74	174.04	183.76	174.17	7.43	64.23
216.22	164.51	164.76	174.07	183.80	174.20	7.44	64.30
216.93	164.54	164.83	174.17	183.92	174.30	7.46	64.51
217.47	164.56	164.87	174.25	184.01	174.37	7.47	64.67
217.89	164.58	164.91	174.31	184.08	174.43	7.49	64.79
218.23	164.59	164.94	174.36	184.14	174.47	7.50	64.89

218.51	164.60	164.97	174.41	184.21	174.52	7.52	64.98
219.21	164.63	165.04	174.54	184.36	174.64	7.55	65.18
219.63	164.64	165.07	174.59	184.43	174.69	7.56	65.31
221.00	164.70	167.53	177.10	186.97	177.19	7.59	65.72
223.10	164.78	172.71	182.36	192.28	182.45	7.65	
226.00	164.89	183.41	193.18	203.18	193.25	7.72	
227.00	164.93	187.10	196.91	206.93	196.98	7.75	
228.00	164.97	190.79	200.64	210.69	200.70	7.77	
229.00	165.01	193.42	203.31	213.37	203.36	7.80	
230.00	165.05	194.96	204.89	214.98	204.94	7.82	
231.00	165.08	196.35	206.32	216.43	206.36	7.84	

RUN NO. 16

JOHNSON & GIERHART CLIMATE RUN DATA  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSI TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI  
 TERRAIN DELTA h: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: EQUATORIAL (1) SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.62	135.66	134.71	135.75	136.93	135.80	0.87	1.67
9.45	138.56	136.78	138.68	141.11	138.85	1.70	2.81
15.09	141.91	139.40	142.10	145.98	142.47	2.59	4.49
18.72	142.60	140.82	143.83	148.37	144.31	2.97	5.57
24.39	147.76	142.71	146.06	151.35	146.66	3.41	7.25
30.67	147.68	144.47	148.04	153.87	148.74	3.71	9.12
35.93	145.02	145.76	149.45	155.56	150.20	3.87	10.68
40.90	150.12	146.84	150.61	156.94	151.41	3.99	12.16
45.96	151.12	147.84	151.67	158.18	152.51	4.09	13.67
50.67	151.95	148.69	152.57	159.21	153.43	4.16	15.07
55.60	152.78	149.55	153.47	160.23	154.35	4.22	16.59
60.47	153.47	150.26	154.22	161.05	155.12	4.27	17.98
65.91	154.22	151.03	155.04	161.94	155.94	4.31	19.60
70.61	154.84	151.69	155.74	162.69	156.65	4.35	21.05
75.85	155.43	152.33	156.42	163.41	157.32	4.38	22.56
80.77	155.97	152.91	157.02	164.05	157.93	4.41	24.02
85.81	156.50	153.49	157.63	164.69	158.54	4.43	25.52
90.65	156.97	154.02	158.19	165.28	159.10	4.45	26.96
95.99	157.47	154.59	158.78	165.91	159.70	4.48	28.54
100.59	157.87	155.06	159.27	166.43	160.19	4.50	29.91
105.56	158.29	155.55	159.80	167.00	160.72	4.53	31.39
110.95	158.72	156.08	160.37	167.63	161.29	4.56	32.99
115.79	159.09	156.57	160.90	168.21	161.83	4.60	34.43
120.89	159.47	157.08	161.47	168.86	162.41	4.66	35.95
125.90	159.82	157.54	162.01	169.48	162.95	4.72	37.44
130.99	160.16	157.96	162.51	170.06	163.45	4.78	38.95
135.75	160.47	158.33	162.95	170.57	163.88	4.83	40.37
140.75	160.78	158.70	163.39	171.08	164.32	4.89	41.85
145.99	161.10	159.06	163.83	171.59	164.76	4.95	43.41
150.86	161.39	159.38	164.22	172.06	165.16	5.00	44.86
155.96	161.67	159.70	164.63	172.55	165.56	5.07	46.38
160.76	161.94	159.98	165.00	173.00	165.93	5.14	47.80
165.65	162.20	160.26	165.37	173.46	166.30	5.20	49.26
170.73	162.46	160.55	165.75	173.94	166.68	5.28	50.77
175.98	162.72	160.78	166.13	174.44	167.05	5.38	52.33
180.84	162.96	161.00	166.47	174.91	167.40	5.48	53.77
185.86	163.20	161.22	166.82	175.40	167.75	5.58	55.27
190.92	163.43	161.44	167.17	175.89	168.10	5.69	56.77
195.65	163.64	161.85	167.78	176.66	168.70	5.83	58.18
200.53	163.86	162.32	168.39	177.39	169.30	5.93	59.63
205.57	164.07	162.79	168.97	178.09	169.89	6.02	61.13
210.78	164.29	163.30	169.64	178.89	170.55	6.13	62.68
215.93	164.50	163.80	170.34	179.71	171.23	6.25	64.21
220.93	164.70	164.26	170.95	180.42	171.82	6.35	65.70
221.84	164.73	164.35	171.05	180.55	171.92	6.36	65.97
225.28	164.87	164.66	171.48	181.08	172.35	6.45	66.99
229.00	164.89	164.74	171.59	181.22	172.46	6.47	67.20
227.10	164.94	164.85	171.76	181.42	172.62	6.50	67.53
228.26	164.98	164.96	171.93	181.62	172.78	6.54	67.87
229.06	165.01	165.04	172.04	181.76	172.89	6.56	68.11
229.67	165.03	165.10	172.13	181.86	172.97	6.58	68.29

230.14	165.05	165.68	172.73	182.48	173.57	6.59	68.43
230.52	165.06	166.33	173.40	183.16	174.24	6.60	68.55
230.83	165.08	166.81	173.89	183.66	174.73	6.61	68.64
231.00	165.08	167.03	174.12	183.90	174.96	6.62	68.69
231.83	165.11	167.60	174.74	184.55	175.57	6.65	68.88
232.09	165.12	168.63	175.78	185.60	176.61	6.66	69.02
235.93	165.27	177.23	184.49	194.42	185.32	6.74	
238.00	165.34	182.04	189.52	199.62	190.34	6.89	
239.00	165.38	184.32	191.95	202.13	192.75	6.98	
240.00	165.41	186.53	194.27	204.52	195.05	7.06	
241.00	165.45	188.37	196.20	206.53	196.98	7.12	
242.00	165.49	189.97	197.86	208.27	198.65	7.17	
243.00	165.52	191.28	199.33	209.80	200.08	7.26	
244.00	165.56	192.45	200.64	211.19	201.38	7.34	
174.26	162.64	155.92	162.93	171.05	163.27	5.91	51.82
175.99	162.72	155.53	160.69	168.96	161.66	5.30	52.33
177.62	162.80	155.39	160.18	168.62	161.32	5.24	52.82
181.00	162.97	156.14	163.35	172.13	163.84	6.26	53.82
181.05	162.97	156.15	163.46	172.25	163.92	6.30	53.84
184.57	163.14	187.29	196.71	205.85	196.62	7.25	54.88
185.99	163.20	161.58	171.11	180.38	171.33	7.35	55.31
188.17	163.30	156.40	164.04	173.52	164.61	6.70	55.96
190.99	163.43	155.61	161.42	171.21	162.72	6.10	56.79
191.86	163.47	155.76	161.34	171.25	162.69	6.14	57.05
195.63	163.64	156.49	164.69	175.09	165.38	7.28	58.17
196.00	163.66	156.60	165.42	175.89	165.94	7.54	58.28
199.51	63.81	184.40	195.34	206.19	195.31	8.51	59.33
201.00	163.88	161.83	172.85	183.75	172.81	8.56	59.77
203.50	163.98	156.88	165.48	176.46	166.22	7.67	60.51
206.00	164.09	156.53	163.20	174.27	164.57	7.01	61.26
207.64	164.16	156.60	163.04	174.15	164.49	6.94	61.74
210.56	164.20	157.44	164.85	176.08	166.04	7.34	62.61
211.00	164.30	157.62	165.36	176.61	166.46	7.46	62.74
212.12	164.34	158.14	166.98	178.28	167.75	7.89	63.08
213.10	164.38	158.64	168.78	180.13	169.16	8.40	63.37
213.80	164.41	159.01	170.22	181.60	170.27	8.83	63.57
214.32	164.43	159.39	171.34	182.75	171.17	9.13	63.73
214.72	164.45	160.22	172.20	183.63	172.03	9.15	63.85
215.05	164.46	160.83	172.84	184.28	172.56	9.16	63.95
215.32	164.47	161.23	173.31	184.80	173.13	9.21	64.03
216.00	164.50	161.98	174.10	185.61	173.91	9.23	64.23
216.00	164.50	161.99	174.10	185.61	173.91	9.23	64.23
216.41	164.52	163.03	175.17	186.69	174.98	9.24	64.35
219.79	164.65	171.65	183.95	195.59	183.74	9.35	
222.00	164.74	180.00	192.45	204.15	192.22	9.44	
223.00	164.78	183.78	196.30	208.02	196.05	9.47	
224.00	164.82	187.57	203.15	211.90	199.89	9.50	
225.00	164.85	191.37	204.00	215.77	203.73	9.54	
226.00	164.89	194.94	207.64	219.44	207.36	9.57	
227.00	164.93	196.46	209.21	221.06	208.93	9.61	



RUN NO. 17

JOHNSON & GIERHART CLIMATE RUN DATA  
 AIRCRAFT ALTITUDE: 13000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI  
 TERRAIN DELTA h: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS 4423 NMI  
 CLIMATE: CONTINENTAL SUBTROPICAL (2) SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: DETERMINED AT 0 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 320 N UNITS

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.65	135.69	134.75	135.77	136.94	135.81	0.86	1.68
9.40	138.52	136.78	138.64	141.01	138.80	1.66	2.80
15.19	141.96	139.47	142.15	146.00	142.51	2.57	4.52
18.73	143.61	140.84	143.83	148.32	144.30	2.94	5.57
24.17	145.69	142.65	145.97	151.20	146.57	3.37	7.19
30.71	147.69	144.48	148.05	153.83	148.74	3.69	9.13
35.99	149.03	145.77	149.45	155.54	150.20	3.86	10.70
40.97	150.13	146.86	150.61	156.92	151.41	3.98	12.18
45.88	151.10	147.82	151.64	158.12	152.47	4.07	13.64
50.68	151.96	148.68	152.56	159.17	153.41	4.15	15.07
55.91	152.80	149.55	153.47	160.21	154.35	4.22	16.63
60.48	153.48	150.24	154.20	161.02	155.09	4.26	17.99
65.79	154.20	150.99	155.00	161.88	155.90	4.31	19.56
70.81	154.84	151.65	155.70	162.64	156.60	4.34	21.06
75.91	155.44	152.29	156.37	163.36	157.28	4.38	22.57
80.77	155.97	152.86	156.98	164.00	157.89	4.40	24.02
85.85	156.50	153.44	157.58	164.64	158.49	4.43	25.53
90.67	156.97	153.96	158.12	165.22	159.04	4.45	26.96
95.97	157.47	154.50	158.69	165.82	159.61	4.48	28.54
100.63	157.88	154.95	159.17	166.34	160.09	4.50	29.92
105.60	158.29	155.39	159.66	166.88	160.58	4.54	31.40
110.99	158.73	155.80	160.16	167.44	161.07	4.60	33.00
115.81	159.09	156.04	160.56	167.95	161.45	4.70	34.44
120.94	159.47	156.06	160.94	168.53	161.78	4.91	35.96
125.90	159.82	156.30	161.61	169.40	162.38	5.15	37.44
130.93	160.16	156.98	162.63	170.55	163.34	5.33	38.93
135.75	160.47	157.57	163.49	171.49	164.14	5.46	40.37
140.84	160.79	158.19	164.40	172.47	164.98	5.59	41.88
145.91	161.10	158.76	165.22	173.34	165.74	5.71	43.39
150.90	161.39	159.33	166.06	174.20	166.50	5.82	44.87
155.88	161.67	159.87	166.88	175.03	167.24	5.93	46.35
160.71	161.93	160.38	167.64	175.81	167.92	6.03	47.79
165.73	162.20	160.90	168.51	176.69	168.69	6.17	49.28
170.97	162.47	161.39	169.31	177.56	169.41	6.31	50.84
175.86	162.72	161.87	170.18	178.48	170.18	6.49	52.30
180.88	162.96	162.30	170.97	179.44	170.91	6.69	53.79
185.90	163.20	162.73	171.85	180.58	171.73	6.97	55.28
190.66	163.42	163.10	172.63	181.62	172.46	7.24	56.70
195.58	163.64	163.41	173.45	182.92	173.27	7.63	58.16
200.67	163.86	163.66	174.26	184.40	174.12	8.10	59.67
205.95	164.09	164.11	175.10	185.47	174.91	8.34	61.24
210.90	164.29	164.55	175.90	186.42	175.64	8.54	62.71
213.64	164.40	164.79	176.29	186.89	176.01	8.64	63.53
215.96	164.50	164.99	176.70	187.36	176.37	8.74	64.22
216.77	164.53	165.07	176.85	187.53	176.51	8.78	64.46
218.44	164.60	165.22	177.13	187.87	176.76	8.85	64.96
219.49	164.64	165.31	177.31	188.07	176.92	8.90	65.27
220.23	164.67	165.37	177.43	188.22	177.03	8.93	65.49
220.78	164.69	165.42	177.52	188.32	177.12	9.95	65.65
221.00	164.70	165.44	177.55	188.37	177.15	8.96	65.72
221.22	164.71	165.46	177.59	188.41	177.18	8.97	65.78

221.57	164.72	165.49	177.65	188.48	177.24	8.99	65.89
221.86	164.73	165.52	177.71	188.55	177.29	9.00	65.97
222.58	164.76	165.56	177.86	188.75	177.43	9.05	66.19
223.01	164.78	165.62	177.92	188.82	177.48	9.07	66.32
225.90	164.89	168.47	180.94	191.91	180.48	9.16	67.17
226.58	164.92	170.07	182.60	193.58	182.12	9.19	
229.00	165.01	178.67	191.40	202.44	190.87	9.29	
230.00	165.05	182.24	195.04	206.10	194.50	9.33	
231.00	165.08	185.78	198.66	209.75	198.10	9.37	
232.00	165.12	187.64	200.67	211.70	200.01	9.41	
233.00	165.16	189.25	202.24	213.40	201.67	9	
234.00	165.19	190.68	203.73	214.92	203.15		

RUNNO. 18

JOHNSON & GIFFHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DEL. AT: 0 FT

CLIMATE: MARITIME SUBTROPICAL (3)

SURFACE REFLECTION LOBING:

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

CONTRIBUTES TO VARIABILITY

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 370 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.81	135.66	134.71	135.75	136.93	135.79	0.87	1.67
9.47	138.57	136.78	138.69	141.15	138.86	1.71	2.82
15.06	141.90	139.38	142.08	145.98	142.45	2.59	4.48
18.71	143.60	140.81	143.83	148.39	144.31	2.98	5.56
24.47	145.79	142.72	146.08	151.40	146.69	3.42	7.28
30.66	147.67	144.46	148.04	153.87	148.74	3.72	9.12
35.91	149.01	145.75	149.44	155.57	150.20	3.88	10.60
40.87	150.11	146.84	150.61	156.94	151.41	3.99	12.15
45.89	151.12	147.84	151.68	158.19	152.51	4.09	13.68
50.67	151.95	148.69	152.57	159.21	153.43	4.16	15.07
55.77	152.78	149.53	153.46	160.22	154.34	4.23	16.58
60.46	153.47	150.24	154.21	161.05	155.11	4.27	17.98
65.95	154.22	151.02	155.04	161.93	155.93	4.32	19.61
70.81	154.84	151.66	155.72	162.66	156.62	4.35	21.06
75.24	155.43	152.29	156.38	163.37	157.28	4.38	22.55
80.78	155.97	152.88	156.99	164.07	157.90	4.41	24.02
85.79	156.50	153.44	157.58	164.65	158.50	4.43	25.51
90.85	156.97	153.96	158.13	165.23	159.05	4.46	26.96
95.99	157.47	154.51	158.70	165.84	159.62	4.48	28.54
100.58	157.87	154.95	159.17	166.34	160.09	4.50	29.91
105.55	158.29	155.40	159.66	166.87	160.58	4.53	31.39
110.94	158.72	155.83	160.14	167.42	161.07	4.58	32.99
115.79	159.09	156.13	160.54	167.89	161.46	4.64	34.43
120.88	159.46	156.32	160.89	168.37	161.80	4.76	35.94
125.90	159.82	156.41	161.23	168.86	162.11	4.90	37.44
130.97	160.16	156.54	161.59	169.36	162.44	5.05	38.95
135.76	160.47	156.97	162.19	170.08	163.02	5.16	40.37
140.73	160.78	157.47	162.82	170.81	163.64	5.25	41.85
145.97	161.10	158.07	163.63	171.71	164.41	5.36	43.41
150.86	161.39	158.58	164.29	172.44	165.05	5.45	44.86
155.93	161.67	159.06	164.90	173.13	165.65	5.52	46.37
160.79	161.94	159.56	165.55	173.84	166.27	5.60	47.81
165.64	162.20	160.07	166.25	174.57	166.91	5.69	49.25
170.68	162.46	160.54	166.84	175.23	167.49	5.76	50.75
175.93	162.72	161.03	167.48	175.94	168.11	5.85	52.32
180.85	162.96	161.53	168.19	176.71	168.77	5.94	53.78
185.83	163.19	161.96	168.78	177.42	169.35	6.05	55.26
190.98	163.43	162.40	169.42	178.21	169.98	6.19	56.79
195.72	163.64	162.82	170.12	179.04	170.63	6.35	58.20
200.54	163.86	163.14	170.68	179.90	171.21	6.56	59.63
205.51	164.07	163.43	171.37	181.00	171.90	6.87	61.11
210.65	164.28	163.90	172.10	181.84	172.59	7.02	62.64
215.97	164.50	164.35	172.69	182.54	173.16	7.11	64.22
220.89	164.69	164.81	173.46	183.44	173.88	7.28	65.69
224.37	164.83	165.11	173.90	183.95	174.30	7.37	66.72
225.97	164.89	165.24	174.08	184.18	174.47	7.40	67.19
227.90	164.97	165.41	174.28	184.43	174.68	7.44	67.77
229.78	165.04	165.57	174.54	184.73	174.92	7.49	68.33
230.96	165.08	165.68	174.76	184.99	175.12	7.54	68.68
231.00	165.08	165.69	174.76	184.99	175.12	7.55	68.69
231.79	165.11	165.76	174.90	185.15	175.25	7.58	68.93

232.41	165.14	165.82	175.00	185.27	175.34	7.60	69.11
232.89	165.15	165.86	175.08	185.36	175.41	7.62	69.25
233.24	165.17	165.90	175.14	185.43	175.47	7.63	69.37
233.61	165.18	165.93	175.19	185.49	175.51	7.65	69.47
234.43	165.21	166.00	175.35	185.69	175.66	7.69	69.71
234.90	165.23	166.05	175.41	185.76	175.72	7.70	69.85
235.99	165.27	166.70	176.11	186.48	176.41	7.73	70.18
238.83	165.37	172.32	182.19	192.78	182.42	8.00	
241.00	165.45	176.24	186.34	197.11	186.55	8.16	
242.00	165.49	177.86	188.23	199.10	188.39	8.30	
243.00	165.62	179.90	190.43	201.39	190.56	8.40	
244.00	165.66	181.64	192.26	203.31	192.40	8.47	
245.00	165.59	183.03	193.84	204.98	193.94	8.57	
246.00	165.63	184.20	195.23	206.46	195.29	8.70	
247.00	165.66	185.32	196.48	207.79	196.53	8.78	

RUN NO. 19

JOHNSON & GIERHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 130 FT ABOVE MSL  
 FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI  
 TERRAIN DELTA: 0 FT  
 CLIMATE: DESERT (4)  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST IT: DETERMINED AT 10 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.67	135.70	134.77	135.79	136.94	135.83	0.85	1.68
9.37	138.50	136.79	138.62	140.95	138.78	1.63	2.79
15.27	142.00	139.51	142.18	146.01	142.54	2.55	4.54
18.75	143.62	140.86	143.84	148.30	144.30	2.93	5.58
24.05	145.65	142.63	145.93	151.11	146.51	3.34	7.15
30.74	147.70	144.50	148.06	153.82	148.74	3.68	9.14
35.94	149.02	145.77	149.44	155.51	150.19	3.85	10.69
40.98	150.14	146.87	150.62	156.91	151.41	3.97	12.19
45.84	151.10	147.82	151.64	158.10	152.47	4.06	13.63
50.69	151.96	148.70	152.57	159.17	153.42	4.14	15.07
55.98	152.81	149.57	153.49	160.22	154.37	4.21	16.65
60.50	153.48	150.26	154.22	161.03	155.11	4.26	17.99
65.74	154.20	151.01	155.01	161.89	155.91	4.30	19.55
70.82	154.84	151.68	155.72	162.66	156.63	4.34	21.06
75.93	155.44	152.32	156.40	163.39	157.31	4.38	22.58
80.77	155.97	152.90	157.01	164.04	157.92	4.40	24.02
85.87	156.50	153.49	157.63	164.69	158.54	4.43	25.54
90.69	156.98	154.02	158.18	165.28	159.10	4.45	26.97
95.98	157.47	154.58	158.77	165.90	159.69	4.48	28.54
100.64	157.88	155.05	159.27	166.44	160.19	4.50	29.93
105.64	158.30	155.53	159.80	167.02	160.72	4.54	31.41
110.97	158.72	156.00	160.36	167.66	161.28	4.61	33.00
115.82	159.09	156.34	160.89	168.32	161.79	4.73	34.44
121.00	159.47	156.50	161.44	169.12	162.29	4.97	35.98
125.92	159.82	156.53	161.92	169.83	162.71	5.23	37.44
130.87	160.15	156.97	162.71	170.85	163.46	5.45	38.92
135.77	160.47	157.59	163.69	171.98	164.37	5.65	40.37
140.94	160.80	158.19	164.60	173.03	165.23	5.82	41.91
145.89	161.10	158.76	165.50	174.01	166.06	5.97	43.38
150.97	161.39	159.34	166.39	174.97	166.87	6.12	44.89
155.79	161.66	159.87	167.23	175.90	167.64	6.27	46.33
160.73	161.94	160.40	168.10	176.85	168.43	6.43	47.79
165.87	162.21	160.93	168.96	177.79	169.21	6.59	49.22
170.90	162.47	161.44	169.87	178.76	170.01	6.77	50.82
175.88	162.72	161.90	170.65	179.73	170.76	6.97	52.30
180.96	162.96	162.36	171.58	180.88	171.61	7.23	53.81
185.71	163.19	162.75	172.35	181.90	172.33	7.48	55.22
190.62	163.42	163.11	173.17	183.06	173.12	7.79	56.68
195.70	163.64	163.42	174.02	184.48	173.98	8.23	58.20
201.00	163.88	163.79	174.81	185.71	174.78	8.56	59.77
205.92	164.09	164.24	175.64	186.70	175.53	8.77	61.23
207.63	164.16	164.39	175.92	187.03	175.79	8.84	61.71
210.56	164.28	164.65	176.37	187.61	176.22	8.97	62.61
210.98	164.30	164.69	176.44	187.63	176.28	8.99	62.74
212.12	164.34	164.79	176.61	187.92	176.45	9.03	63.08
213.10	164.38	164.88	176.76	188.11	176.59	9.00	63.37
213.80	164.41	164.94	176.86	188.24	176.69	9.10	63.57
214.32	164.43	164.98	176.94	188.35	176.77	9.13	63.73
214.72	164.45	155.02	177.00	188.43	176.83	9.15	63.85
215.05	164.46	165.05	177.06	188.50	176.88	9.16	63.95
215.32	164.47	165.08	177.16	188.65	176.97	9.21	64.03

210.00	164.50	165.14	177.25	188.76	177.06	9.23	64.23
216.00	164.50	165.14	177.25	188.76	177.06	9.23	64.23
216.41	164.52	165.17	177.31	188.83	177.12	9.24	64.35
219.79	164.65	171.65	183.95	195.59	183.74	9.35	
222.00	164.74	180.00	192.45	204.15	192.22	9.44	
223.00	164.78	183.78	196.30	208.02	196.05	9.47	
224.00	164.82	187.57	200.15	211.90	199.89	9.50	
225.00	164.85	191.37	204.00	215.77	203.73	9.54	
226.00	164.89	194.94	207.64	219.44	207.36	9.57	
227.00	164.93	196.46	209.21	221.06	208.93	9.61	
185.99	162.22	155.15	159.80	167.22	160.67	4.76	49.36
167.77	162.31	155.69	162.43	170.00	162.69	5.59	49.89
170.98	162.47	185.97	194.14	201.96	194.03	6.25	50.84
171.00	162.47	185.88	193.85	201.68	193.75	6.25	50.85
174.26	162.64	155.92	162.93	171.05	163.27	5.91	51.82
175.99	162.72	155.53	160.69	168.96	161.66	5.30	52.33
177.62	162.80	155.39	160.18	168.62	161.32	5.24	52.82
181.00	162.97	156.14	163.35	172.13	163.84	6.26	53.82
181.05	162.97	156.15	163.46	172.25	163.92	6.30	53.84
184.57	163.14	187.29	196.71	205.85	196.62	7.25	54.88
185.99	163.20	161.58	171.11	180.38	171.03	7.35	55.31
188.17	163.30	156.40	164.04	173.52	164.61	6.70	55.96
190.99	163.43	155.81	161.42	171.21	162.72	6.10	56.79
191.86	163.47	155.76	161.34	171.25	162.69	6.14	57.05
195.63	163.64	156.49	164.69	175.09	165.38	7.28	58.17
196.00	163.66	156.60	165.42	175.89	165.94	7.54	58.28
199.51	163.81	184.40	195.34	205.19	195.31	8.51	59.33
201.00	163.88	161.83	172.85	183.75	172.81	8.56	59.77
203.50	163.98	156.88	165.48	176.46	166.22	7.67	60.51
206.00	164.09	156.53	163.20	174.27	164.57	7.01	61.26
207.64	164.16	156.60	163.04	174.15	164.49	6.94	61.74
210.56	164.28	157.44	164.85	176.08	166.04	7.34	62.61
211.00	164.30	157.62	165.36	176.67	166.46	7.46	62.74
212.14	164.34	158.14	166.98	178.18	167.75	7.89	63.08
213.10	164.38	158.64	168.78	180.13	169.16	8.40	63.37
215.80	164.41	159.01	170.22	181.60	170.27	8.83	63.57
214.32	164.43	159.39	171.34	182.75	171.17	9.13	63.73
214.72	164.45	160.22	172.20	183.83	172.03	9.15	63.85
215.05	164.46	160.83	172.84	184.28	172.66	9.16	63.95
215.32	164.47	161.23	173.31	184.80	173.13	9.21	64.03
216.00	164.50	161.98	174.10	185.61	173.91	9.23	64.23
216.00	164.50	161.98	174.10	185.61	173.91	9.23	64.23
216.41	164.52	163.03	175.17	186.69	174.98	9.24	64.35
219.79	164.65	171.65	183.95	195.59	183.74	9.35	
222.00	164.74	180.00	192.45	204.15	192.22	9.44	
223.00	164.78	183.78	196.30	208.02	196.05	9.47	
224.00	164.82	187.57	200.15	211.90	199.89	9.50	
225.00	164.85	191.37	204.00	215.77	203.73	9.54	
226.00	164.89	194.94	207.64	219.44	207.36	9.57	
227.00	164.93	196.46	209.21	221.06	208.93	9.61	

RUN NO. 20

JOHNSON & GIERHART CLIMATE RUN DATA

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL  
 FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC  
 TYPE: ISOTROPIC

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: DETERMINED AT 0 FT ABOVE MSL

TERRAIN DELTA: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 320 N-UNITS

CLIMATE: CONTINENTAL TEMPERATE(6)

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.65	135.69	134.75	135.77	136.94	135.81	0.86	1.68
9.40	138.52	136.78	138.64	141.01	138.80	1.66	2.80
15.19	141.96	139.47	142.15	146.00	142.51	2.57	4.52
18.73	143.61	140.84	143.83	148.32	144.30	2.94	5.57
24.17	145.69	142.65	145.97	151.20	146.57	3.37	7.19
30.71	147.69	144.48	148.05	153.83	148.74	3.69	9.13
35.99	149.03	145.77	149.45	155.54	150.20	3.86	10.70
40.97	150.13	146.86	150.61	156.92	151.41	3.98	12.18
45.88	151.10	147.82	151.64	158.12	152.47	4.07	13.64
50.68	151.96	148.66	152.55	159.17	153.41	4.15	15.07
55.91	152.80	149.55	153.47	160.21	154.35	4.22	16.63
60.48	153.48	150.24	154.20	161.02	155.09	4.26	17.99
65.79	154.20	150.99	155.00	161.88	155.89	4.31	19.56
70.81	154.84	151.65	155.70	162.64	156.60	4.34	21.06
75.91	155.44	152.29	156.37	163.35	157.28	4.38	22.57
80.77	155.97	152.86	156.97	164.00	157.88	4.40	24.02
85.65	156.50	153.43	157.58	164.64	158.49	4.43	25.53
90.67	156.97	153.95	158.12	165.22	159.03	4.45	26.96
95.97	157.47	154.49	158.69	165.82	159.60	4.48	28.54
100.63	157.88	154.94	159.17	166.33	160.08	4.51	29.92
105.60	158.29	155.37	159.65	166.87	160.57	4.54	31.40
110.99	158.73	155.76	160.15	167.43	161.05	4.61	33.00
115.81	159.09	155.94	160.54	167.93	161.41	4.73	34.44
120.94	159.47	155.84	160.92	168.50	161.70	4.98	35.96
125.90	159.82	156.48	162.00	169.75	162.00	5.21	37.44
130.93	160.16	157.19	163.11	170.93	163.70	5.38	38.93
135.75	160.47	157.79	163.98	171.83	164.50	5.50	40.37
140.84	160.79	158.35	164.76	172.67	165.23	5.61	41.88
145.91	161.10	158.93	165.62	173.55	166.01	5.72	43.39
150.90	161.39	159.46	166.39	174.34	166.71	5.82	44.87
155.88	161.67	159.94	167.06	175.07	167.34	5.91	46.35
160.71	161.93	160.44	167.84	175.85	168.03	6.02	47.79
165.73	162.20	160.92	168.58	176.60	168.69	6.13	49.28
170.97	162.47	161.38	169.25	177.39	169.34	6.25	50.84
175.86	162.72	161.83	170.01	178.23	170.03	6.41	52.30
180.88	162.96	162.26	170.74	179.14	170.71	6.59	53.79
185.90	163.20	162.65	171.37	180.05	171.36	6.80	55.28
190.66	163.42	163.02	172.07	180.98	172.02	7.02	56.70
195.58	163.64	163.31	172.76	182.10	172.73	7.34	58.16
200.67	163.86	163.55	173.35	183.30	173.40	7.72	59.67
205.95	164.09	163.99	174.01	184.14	174.05	7.87	61.24
210.90	164.29	164.42	174.71	184.99	174.71	8.03	62.71
213.64	164.40	164.66	175.05	185.41	175.04	8.10	63.53
215.96	164.50	164.86	175.32	185.75	175.31	8.16	64.22
218.77	164.53	164.93	175.41	185.86	175.40	8.18	64.46
218.44	164.60	165.07	175.60	186.10	175.59	8.22	64.96
219.49	164.64	165.16	175.71	186.25	175.70	8.24	65.27
220.23	164.67	165.22	175.79	186.35	175.79	8.25	65.49
220.78	164.69	165.26	175.86	186.43	175.85	8.27	65.65
221.00	164.70	165.28	175.88	186.46	175.87	8.27	65.72
221.22	164.71	165.30	175.90	186.49	175.90	8.28	65.78

221.57	164.72	165.33	175.95	186.55	175.94	8.29	65.89
221.86	164.73	165.36	175.99	186.60	175.98	8.30	65.97
222.58	164.76	165.43	176.15	186.80	176.12	8.35	66.19
223.01	164.78	165.46	176.21	186.87	176.18	8.36	66.32
225.90	164.89	170.07	180.97	191.71	180.92	8.45	57.17
226.58	164.92	171.70	182.63	193.38	182.57	8.47	
229.00	165.01	180.41	191.43	202.24	191.36	8.53	
230.00	165.05	184.01	195.07	205.90	195.00	8.55	
231.00	165.08	187.60	198.69	209.54	198.61	8.57	
232.00	165.12	189.48	200.60	211.48	200.53	8.59	
233.00	165.16	191.13	202.28	213.18	202.20	8.61	
234.00	165.19	192.59	203.76	214.68	203.68	8.63	



RUN NO. 21

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCES: DETERMINED AT 3.9 NMI

TERRAIN DELTA: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

CLIMATE: MARITIME TEMPERATE OCEANIC (7)

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

FREQUENCY: 9.5 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 320 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.81	145.97	146.13	145.97	0.12	7.19
30.71	147.69	147.90	148.05	148.20	148.05	0.12	9.13
35.95	149.03	149.30	149.45	149.61	149.45	0.12	10.70
40.97	150.13	150.47	150.62	150.77	150.62	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.96	152.41	152.56	152.71	152.56	0.12	15.07
55.91	152.80	153.32	153.47	153.62	153.47	0.12	16.63
60.48	153.48	154.05	154.20	154.36	154.21	0.12	17.99
65.79	154.20	154.85	155.00	155.16	155.00	0.12	19.56
70.81	154.84	155.55	155.70	155.86	155.71	0.12	21.06
75.91	155.44	156.22	156.38	156.54	156.38	0.12	22.57
80.77	155.97	156.82	156.98	157.15	156.98	0.13	24.02
85.85	156.50	157.42	157.59	157.76	157.59	0.13	25.53
90.67	156.97	157.95	158.13	158.31	158.13	0.14	26.96
95.97	157.47	158.51	158.71	158.90	158.71	0.16	28.54
100.63	157.88	158.72	159.19	159.67	159.20	0.37	29.92
105.60	158.29	158.83	159.69	160.63	159.72	0.71	31.40
110.99	158.73	158.95	160.21	161.64	160.26	1.05	33.00
115.81	159.09	159.02	160.66	162.53	160.73	1.37	34.44
120.94	159.47	158.99	161.11	163.52	161.20	1.77	35.96
125.90	159.82	158.95	161.54	164.43	161.63	2.14	37.44
130.93	160.16	158.99	161.96	165.29	162.07	2.46	38.93
135.75	160.47	159.10	162.37	166.08	162.51	2.73	40.37
140.84	160.79	159.26	162.79	166.88	162.97	2.98	41.88
145.91	161.10	159.38	163.20	167.67	163.40	3.24	43.39
150.90	161.39	159.70	163.83	168.65	164.05	3.50	44.87
155.88	161.67	160.08	164.48	169.65	164.72	3.74	46.35
160.71	161.93	160.43	165.06	170.55	165.33	3.96	47.79
165.73	162.20	160.79	165.66	171.54	165.97	4.20	49.28
170.97	162.47	161.21	166.46	172.74	166.78	4.51	50.84
175.86	162.72	161.58	167.10	173.76	167.45	4.77	52.30
180.88	162.96	161.93	167.70	174.77	168.11	5.03	53.79
185.90	163.20	162.27	168.35	175.90	168.82	5.33	55.28
190.66	163.42	162.66	169.08	177.10	169.58	5.66	56.70
195.58	163.64	162.88	169.72	178.32	170.27	6.05	58.16
200.67	163.86	163.02	170.32	179.64	170.95	6.51	59.67
205.95	164.09	163.51	171.12	180.63	171.71	6.70	61.24
210.90	164.29	163.97	171.80	181.47	172.29	6.85	62.71
213.64	164.40	164.22	172.16	181.92	172.73	6.92	63.53
215.96	164.50	164.43	172.46	182.27	173.02	6.98	64.22
216.77	164.53	164.50	172.56	182.39	173.11	7.00	64.46
218.44	164.60	164.65	172.75	182.64	173.31	7.04	64.90
219.49	164.64	164.74	172.87	182.79	173.43	7.07	65.27
220.23	164.67	164.81	172.99	182.94	173.54	7.09	65.49
220.78	164.69	164.87	173.10	183.05	173.64	7.12	65.65
221.00	164.70	164.89	173.14	183.11	173.68	7.13	65.72
221.22	164.71	164.91	173.18	183.16	173.71	7.14	65.78

221.57	164.72	164.95	173.24	183.24	173.77	7.16	65.89
221.86	164.73	164.98	173.30	183.31	173.83	7.17	65.97
221.88	164.73	164.98	173.31	183.32	173.83	7.17	65.98
223.01	164.78	166.65	175.09	185.14	175.59	7.23	66.32
225.82	164.89	174.93	183.52	193.66	184.01	7.32	
228.00	164.97	182.84	191.59	201.73	192.00	7.38	
229.00	165.01	186.48	195.21	205.43	195.68	7.41	
230.00	165.05	190.12	198.89	209.13	199.35	7.43	
231.00	165.08	192.66	201.46	211.73	201.92	7.46	
232.00	165.12	194.35	203.18	213.49	203.64	7.49	
233.00	165.16	195.85	204.71	215.08	205.17	7.51	

RUN NO. 22

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 320 N-UNITS

CLIMATE: MARITIME TEMPERATE OVERSEA (8)

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.89	147.90	148.05	148.20	148.05	0.12	9.13
35.99	149.03	149.30	149.45	149.60	149.45	0.12	10.70
40.97	150.13	150.46	150.61	150.77	150.61	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.96	152.40	152.55	152.71	152.55	0.12	15.07
55.91	152.80	153.31	153.46	153.62	153.47	0.12	16.63
60.48	153.48	154.05	154.20	154.35	154.20	0.12	17.99
65.79	154.20	154.84	154.99	155.15	154.99	0.12	19.56
70.81	154.84	155.54	155.70	155.85	155.70	0.12	21.05
75.91	155.44	156.20	156.37	156.53	156.36	0.13	22.57
80.77	155.97	156.79	156.97	157.13	156.97	0.13	24.02
85.85	156.50	157.38	157.57	157.74	157.56	0.14	25.53
90.67	156.97	157.90	158.11	158.30	158.10	0.16	26.96
95.97	157.47	158.42	158.60	158.80	158.66	0.18	28.54
100.63	157.88	158.63	159.15	159.65	159.14	0.40	29.92
105.60	158.29	158.71	159.63	160.59	159.64	0.73	31.40
110.99	158.73	158.76	160.12	161.57	160.15	1.10	33.00
115.61	159.09	158.63	160.49	162.44	160.52	1.49	34.44
120.94	159.47	158.27	160.84	163.40	160.84	2.00	35.96
125.90	159.82	158.02	161.18	164.31	161.17	2.46	37.44
130.93	160.16	158.37	162.04	165.68	162.03	2.86	38.93
135.75	160.47	158.77	162.88	166.96	162.87	3.20	40.37
140.84	160.79	159.16	163.62	168.15	163.64	3.51	41.88
145.91	161.10	159.55	164.32	169.28	164.38	3.80	43.39
150.90	161.39	159.96	165.14	170.50	165.20	4.12	44.87
155.88	161.67	160.34	165.81	171.60	165.91	4.40	46.35
160.71	161.93	160.69	166.42	172.64	166.57	4.67	47.79
165.73	162.20	161.09	167.24	173.92	167.41	5.01	49.28
170.97	162.47	161.47	167.89	175.04	168.12	5.30	50.84
175.86	162.72	161.84	168.56	176.18	168.84	5.61	52.30
180.88	162.96	162.22	169.32	177.48	169.65	5.96	53.79
185.90	163.20	162.57	169.92	178.63	170.34	6.28	55.28
190.66	163.42	162.92	170.65	179.88	171.12	6.63	56.70
195.58	163.64	163.18	171.34	181.24	171.89	7.07	58.16
200.67	163.86	163.35	171.92	182.60	172.58	7.53	59.67
205.95	164.09	163.82	172.82	183.81	173.44	7.82	61.24
210.90	164.29	164.25	173.41	184.65	174.06	7.98	62.71
213.64	164.40	164.50	173.77	185.19	174.44	8.10	63.53
215.96	164.50	164.72	174.20	185.76	174.85	8.23	64.22
216.77	164.53	164.79	174.33	185.94	174.98	8.28	64.46
218.44	164.60	164.94	174.59	186.29	175.22	8.35	64.96
219.49	164.64	165.04	174.72	186.49	175.37	8.40	65.27
220.23	164.67	165.10	174.82	186.63	175.47	8.43	65.49
220.78	164.69	165.15	174.89	186.74	175.55	8.45	65.65
221.00	164.70	165.17	174.91	186.78	175.58	8.46	65.72
221.22	164.71	165.19	174.94	186.82	175.60	8.47	65.78

221.57	164.72	165.22	174.99	186.89	175.65	8.48	65.89
221.86	164.73	165.24	175.03	186.96	175.70	8.50	65.97
221.88	164.73	165.25	175.04	186.97	175.70	8.50	65.98
223.01	164.78	165.35	175.20	187.22	175.87	8.56	66.32
225.82	164.89	171.56	181.54	193.70	182.22	8.66	
228.00	164.97	179.33	189.49	201.77	190.15	8.78	
229.00	165.01	182.92	193.15	205.47	193.80	8.82	
230.00	165.05	186.52	196.80	209.17	197.45	8.96	
231.00	165.08	189.02	199.35	211.76	200.00	8.90	
232.00	165.12	190.68	201.04	213.50	201.70	8.93	
233.00	165.16	192.15	202.54	215.06	203.20	8.96	

RUN NO. 23

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 39 NMI

TERRAIN DELTA: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

CLIMATE: CONTINENTAL JUL YEAR (0)

SURFACE REFLECTION COEFFICIENT: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT DETERMINED AT 411 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 30: N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.65	132.70	132.86	132.70	0.12	0.30
5.66	135.89	135.83	135.78	135.93	135.78	0.12	1.68
9.39	138.51	138.48	138.63	138.79	138.63	0.12	2.79
15.23	141.98	142.02	142.17	142.32	142.17	0.12	4.53
18.74	143.61	143.69	143.83	143.99	143.84	0.12	5.57
24.10	145.67	145.80	145.95	146.10	145.95	0.12	7.17
30.72	147.69	147.90	148.05	148.20	148.05	0.12	9.14
35.98	149.03	149.30	149.45	149.60	149.45	0.12	10.70
40.99	150.14	150.47	150.62	150.77	150.62	0.12	12.19
45.86	151.10	151.49	151.64	151.79	151.64	0.12	13.64
50.68	151.96	152.20	152.55	152.71	152.55	0.12	15.07
55.95	152.81	153.32	153.47	153.62	153.47	0.12	16.64
60.49	153.48	154.05	154.20	154.36	154.20	0.12	17.99
65.77	154.20	154.84	154.99	155.15	154.99	0.12	19.56
70.81	154.84	155.54	155.70	155.85	155.70	0.12	21.06
75.92	155.44	156.21	156.37	156.53	156.37	0.12	22.58
80.77	155.97	156.81	156.97	157.14	156.97	0.13	24.02
85.87	156.50	157.40	157.58	157.74	157.57	0.14	25.53
90.68	156.98	157.92	158.12	158.30	158.11	0.15	26.96
95.97	157.47	158.45	158.69	158.88	158.68	0.17	28.54
100.95	157.90	158.68	159.20	159.71	159.20	0.41	30.02
102.31	158.02	158.70	159.34	159.97	159.34	0.50	30.42
103.89	158.15	158.73	159.50	160.28	159.50	0.60	30.89
105.52	158.29	158.75	159.65	160.58	159.66	0.72	31.38
108.00	158.33	158.76	159.70	160.67	159.71	0.75	31.52
107.18	158.42	158.78	159.81	160.90	159.83	0.83	31.87
108.89	158.56	158.80	159.97	161.21	159.99	0.94	32.38
110.84	158.70	158.81	160.13	161.53	160.15	1.06	32.90
111.00	158.73	158.81	160.16	161.59	160.19	1.08	33.01
112.44	158.84	158.81	160.28	161.85	160.31	1.19	33.43
114.28	158.98	158.79	160.44	162.18	160.47	1.32	33.98
118.00	159.11	158.73	160.58	162.48	160.60	1.46	34.49
116.17	159.12	158.73	160.59	162.51	160.61	1.48	34.54
118.11	159.26	158.63	160.74	162.86	160.74	1.65	35.12
120.10	159.41	158.51	160.89	163.22	160.87	1.84	35.71
121.00	159.47	158.52	160.95	163.38	160.95	1.90	35.98
122.14	159.55	158.55	161.04	163.58	161.06	1.96	36.32
124.23	159.70	158.62	161.20	163.95	161.25	2.08	36.94
126.00	159.82	158.67	161.33	164.25	161.41	2.18	37.47
126.38	159.85	158.68	161.36	164.31	161.44	2.20	37.58
128.59	160.00	158.75	161.53	164.68	161.64	2.32	38.24
130.85	160.15	158.82	161.70	165.05	161.85	2.43	38.91
131.00	160.16	158.83	161.71	165.07	161.86	2.44	38.95
133.17	160.30	158.91	161.88	165.41	162.05	2.54	39.60
135.56	160.46	158.99	162.06	165.78	162.26	2.65	40.31
136.00	160.49	159.01	162.09	165.84	162.30	2.68	40.44
136.00	160.61	159.07	162.24	166.15	162.47	2.77	41.04
140.51	160.77	159.16	162.43	166.53	162.69	2.89	41.78
141.00	160.80	159.18	162.47	166.60	162.73	2.91	41.93
143.08	160.93	159.25	162.62	166.92	162.91	3.00	42.55
145.72	161.09	159.35	162.82	167.30	163.13	3.12	43.33
146.00	161.10	159.36	162.84	167.34	163.16	3.13	43.41

148.43	161.25	159.44	163.02	167.69	163.36	3.23	44.14
151.00	161.39	159.53	163.21	168.06	163.57	3.34	44.90
151.20	161.41	159.54	163.22	168.09	163.59	3.35	44.96
154.05	161.57	159.64	163.43	168.50	163.83	3.48	45.81
155.99	161.68	159.70	163.57	168.78	163.99	3.56	46.39
156.97	161.73	159.73	163.64	168.92	164.07	3.60	46.68
159.96	161.89	159.83	163.85	169.35	164.31	3.74	47.57
160.99	161.95	159.86	163.92	169.50	164.39	3.78	47.87
163.03	162.06	159.92	164.07	169.80	164.56	3.88	48.48
166.00	162.22	160.01	164.27	170.23	164.80	4.01	49.36
166.18	162.22	160.02	164.29	170.26	164.82	4.02	49.41
169.40	162.39	160.11	164.51	170.73	165.08	4.17	50.37
170.99	162.47	160.16	164.52	170.96	165.21	4.24	50.85
172.70	162.56	160.20	164.74	171.21	165.34	4.32	51.35
176.00	162.72	160.29	164.97	171.69	165.61	4.48	52.33
176.08	162.73	160.29	164.97	171.70	165.61	4.48	52.36
179.54	162.90	160.38	165.21	172.24	165.90	4.66	53.39
180.99	162.97	160.41	165.31	172.48	166.02	4.75	53.82
183.09	163.07	160.46	165.45	172.83	166.19	4.87	54.44
185.99	163.20	160.52	165.65	173.31	166.44	5.03	55.31
186.72	163.24	160.53	165.70	173.43	166.50	5.08	55.52
190.44	163.41	160.58	165.95	174.05	166.80	5.30	56.63
191.00	163.43	160.57	165.98	174.14	166.84	5.34	56.79
194.25	163.58	160.48	166.16	174.72	167.06	5.60	57.76
195.99	163.66	160.43	166.27	175.04	167.19	5.75	58.28
198.15	163.75	160.35	166.47	175.55	167.39	5.98	58.92
201.00	163.88	160.35	166.82	176.17	167.72	6.22	59.77
202.16	163.93	160.39	166.97	176.35	167.84	6.27	60.11
206.00	164.09	160.29	167.03	176.50	167.88	6.36	61.26
206.29	164.10	160.27	166.99	176.47	167.85	6.36	61.34
210.58	164.28	159.66	166.15	175.73	167.12	6.32	62.62
211.00	164.30	159.60	166.11	175.70	167.07	6.33	62.74
213.59	164.40	159.35	166.43	176.08	167.23	6.56	63.51
215.20	164.47	159.31	167.28	176.97	167.81	6.91	63.99
216.00	164.50	159.31	167.90	177.62	168.26	7.16	64.23
216.22	164.51	159.32	168.10	177.83	168.39	7.23	64.30
216.93	164.54	159.44	168.79	178.53	168.91	7.46	64.51
217.47	164.56	159.95	169.33	179.09	169.45	7.47	64.67
217.89	164.58	160.35	169.75	179.52	169.86	7.49	64.79
218.23	164.59	160.66	170.07	179.85	170.19	7.50	64.89
218.51	164.60	160.83	170.32	180.12	170.43	7.52	64.98
218.52	164.60	160.88	170.33	180.13	170.44	7.52	64.98
219.63	164.64	164.22	173.74	183.58	173.84	7.56	65.31
221.00	164.70	168.38	177.95	187.82	178.04	7.59	65.72
222.36	164.75	172.50	182.13	192.03	182.21	7.83	
225.00	164.85	182.33	192.06	202.03	192.13	7.70	
226.00	164.89	186.05	195.82	205.81	195.89	7.72	
227.00	164.93	189.76	199.58	209.59	199.64	7.75	
228.00	164.97	193.12	202.97	213.01	203.03	7.77	
229.00	165.01	194.70	204.60	214.65	204.65	7.80	
230.00	165.05	196.11	206.04	216.13	206.09	7.82	

RUN NO. 24

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

OBST HT: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 360 N-UNITS

CLIMATE: EQUATORIAL (1)

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.62	135.66	135.60	135.75	135.91	135.75	0.12	1.67
9.45	138.56	138.53	138.68	138.83	138.68	0.12	2.81
15.09	141.91	141.95	142.10	142.25	142.10	0.12	4.49
18.72	143.60	143.68	143.83	143.96	143.83	0.12	5.57
24.39	145.76	145.91	146.06	146.21	146.06	0.12	7.25
30.67	147.68	147.80	148.04	148.20	148.05	0.12	9.12
35.93	149.02	149.30	149.60	149.60	149.45	0.12	10.68
40.90	150.12	150.46	150.77	150.77	150.61	0.12	12.16
45.96	151.12	151.52	151.83	151.83	151.68	0.12	13.67
50.67	151.95	152.42	152.57	152.73	152.57	0.12	15.07
55.80	152.78	153.32	153.47	153.62	153.47	0.12	16.59
60.47	153.47	154.07	154.22	154.38	154.23	0.12	17.98
65.91	154.22	154.89	155.04	155.20	155.05	0.12	19.60
70.81	154.84	155.60	155.74	155.90	155.75	0.12	21.05
75.85	155.43	156.27	156.42	156.57	156.42	0.12	22.56
80.77	155.97	156.87	157.02	157.18	157.02	0.12	24.02
85.81	156.50	157.47	157.63	157.79	157.63	0.12	25.52
90.65	156.97	158.03	158.19	158.35	158.19	0.12	26.96
95.99	157.47	158.62	158.78	158.94	158.78	0.13	28.54
100.94	157.90	158.82	159.01	159.83	159.32	0.40	30.02
102.42	158.03	158.86	159.47	160.12	159.48	0.49	30.46
104.08	158.17	158.90	159.64	160.44	159.66	0.60	30.95
105.79	158.31	158.96	159.82	160.77	159.85	0.71	31.46
106.00	158.33	158.97	159.84	160.81	159.87	0.72	31.52
107.54	158.45	159.02	160.01	161.11	160.04	0.82	31.98
109.35	158.60	159.09	160.20	161.45	160.24	0.92	32.52
111.00	158.73	159.16	160.37	161.77	160.43	1.02	33.01
111.20	158.74	159.17	160.39	161.80	160.45	1.03	33.07
113.10	158.89	159.26	160.60	162.17	160.67	1.14	33.63
115.06	159.04	159.36	160.81	162.55	160.90	1.25	34.21
115.99	159.11	159.41	160.92	162.73	161.01	1.30	34.49
117.07	159.19	159.46	161.04	162.94	161.14	1.36	34.81
119.14	159.34	159.57	161.28	163.35	161.39	1.48	35.43
121.00	159.47	159.66	161.49	163.71	161.61	1.58	35.98
121.27	159.49	159.68	161.52	163.77	161.65	1.60	36.06
123.45	159.65	159.79	161.76	164.19	161.90	1.72	36.71
125.70	159.80	159.90	161.99	164.61	162.15	1.84	37.38
126.00	159.82	159.92	162.02	164.66	162.19	1.86	37.47
128.01	159.96	160.01	162.23	165.02	162.41	1.96	38.07
130.39	160.12	160.11	162.46	165.44	162.66	2.08	38.77
131.00	160.16	160.14	162.51	165.54	162.72	2.11	38.95
132.84	160.28	160.23	162.69	165.84	162.93	2.20	39.50
135.35	160.45	160.35	162.91	166.24	163.15	2.31	40.25
135.99	160.49	160.38	162.97	166.34	163.21	2.34	40.44
137.94	160.61	160.47	163.14	166.65	163.40	2.42	41.02
140.60	160.77	160.59	163.37	167.07	163.66	2.54	41.61
141.00	160.80	160.61	163.41	167.13	163.70	2.56	41.93
143.33	160.94	160.71	163.60	167.49	163.91	2.66	42.62
146.00	161.10	160.81	163.83	167.86	164.15	2.77	43.41
146.14	161.11	160.82	163.84	167.90	164.15	2.79	43.46
149.03	161.28	160.93	164.08	168.33	164.42	2.90	44.32

150.99	161.39	161.01	154.23	168.62	164.60	2.98	44.90
152.01	161.45	161.05	164.32	168.77	164.69	3.03	45.20
155.06	161.62	161.17	164.56	169.21	164.95	3.16	46.11
156.00	161.6 <sup>a</sup>	161.20	164.63	169.35	165.03	3.20	46.39
158.20	161.80	161.28	164.80	169.67	165.22	3.29	47.04
160.99	161.95	161.38	165.02	170.06	165.46	3.41	47.87
161.43	161.97	161.39	165.05	170.12	165.49	3.43	48.00
164.75	162.15	161.51	165.30	170.60	165.77	3.57	48.99
165.99	162.22	161.56	165.40	170.78	165.88	3.62	49.36
168.16	162.33	161.64	165.56	171.10	166.07	3.72	50.01
170.99	162.47	161.73	165.76	171.52	166.30	3.84	50.85
171.67	162.51	161.74	165.81	171.62	166.35	3.88	51.05
175.26	162.69	161.82	166.07	172.14	166.64	4.05	52.12
178.00	162.72	161.84	166.13	172.25	166.70	4.09	52.33
178.96	162.87	161.91	166.34	172.68	166.94	4.23	53.22
180.99	162.97	161.96	166.48	172.98	167.10	4.33	53.82
182.75	163.05	162.00	166.61	173.25	167.24	4.42	54.34
185.99	163.20	162.07	166.83	173.78	167.51	4.60	55.31
186.65	163.23	162.09	166.87	173.88	167.57	4.64	55.50
190.65	163.42	162.20	167.15	174.52	167.91	4.85	56.69
191.00	163.43	162.20	167.17	174.58	167.93	4.87	56.80
194.75	163.60	162.23	167.44	175.20	168.23	5.10	57.91
195.99	163.66	162.20	167.52	175.42	168.33	5.20	58.28
198.96	163.79	162.12	167.71	175.97	168.54	5.44	59.16
200.99	163.87	162.07	167.83	176.33	168.68	5.61	59.77
203.28	163.87	161.97	167.95	176.78	168.84	5.82	60.45
205.98	164.09	161.95	168.13	177.27	169.05	6.02	61.25
207.71	164.16	162.07	168.28	177.46	169.21	6.05	61.76
211.00	164.30	162.32	168.67	177.93	169.58	6.14	62.74
212.27	164.35	162.42	168.83	178.11	169.72	6.17	63.12
216.00	164.50	162.43	168.97	178.34	169.85	6.25	64.23
216.97	164.54	162.31	168.88	178.27	169.76	6.27	64.52
221.00	164.70	161.49	168.17	177.65	169.04	6.35	65.72
221.85	164.73	161.37	168.06	177.56	168.94	6.36	65.97
225.28	164.87	161.53	168.35	177.95	169.22	6.45	66.99
226.00	164.89	161.77	168.62	178.24	169.48	6.47	67.20
227.10	164.94	162.31	169.22	178.88	170.08	6.50	67.53
228.26	164.98	163.11	170.07	179.77	170.92	6.54	67.87
229.06	165.01	163.78	170.79	180.50	171.63	6.56	68.11
229.67	165.03	164.32	171.35	181.09	172.20	6.58	68.29
230.14	165.05	164.74	171.79	181.54	172.64	6.59	68.43
230.52	165.06	165.07	172.14	181.90	172.98	6.60	68.55
230.83	165.08	165.32	172.40	182.17	173.24	6.61	68.64
230.89	165.08	165.36	172.44	182.22	173.28	6.62	68.66
231.00	165.08	165.66	172.75	182.54	173.59	6.62	68.69
232.09	165.12	168.64	175.79	185.62	176.63	6.66	69.02
235.13	165.24	177.01	184.25	194.15	185.08	6.73	
238.00	165.34	184.12	191.60	201.69	192.41	6.89	
239.00	165.38	186.36	193.99	204.16	194.78	6.98	
240.00	165.41	188.22	195.96	206.22	196.74	7.06	
241.00	165.45	189.83	197.65	207.99	198.44	7.12	
242.00	165.49	191.26	199.14	209.55	199.93	7.17	
243.00	165.52	192.43	200.48	210.95	201.23	7.26	



RUN NO. 25

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: CONTINENTAL SUBTROPICAL (2)

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 320 N-UNITS

SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.69	147.90	148.05	148.20	148.05	0.12	9.13
35.99	149.03	149.30	149.45	149.61	149.45	0.12	10.70
40.97	150.13	150.46	150.61	150.77	150.62	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.96	152.40	152.56	152.71	152.56	0.12	15.07
55.91	152.80	153.32	153.47	153.62	153.47	0.12	16.63
60.48	153.48	154.05	154.20	154.36	154.20	0.12	17.99
65.79	154.20	154.84	155.00	155.16	155.00	0.12	19.56
70.81	154.84	155.54	155.70	155.86	155.70	0.13	21.06
75.91	155.44	156.20	156.37	156.54	156.37	0.13	22.57
80.77	155.97	156.80	156.98	157.16	156.98	0.14	24.02
85.85	156.50	157.38	157.58	157.77	157.58	0.15	25.53
90.67	156.97	157.89	158.12	158.34	158.12	0.18	26.96
95.97	157.47	158.41	158.69	158.95	158.69	0.21	28.54
100.94	157.90	158.63	159.20	159.77	159.20	0.44	30.02
102.41	158.03	158.66	159.35	160.05	159.35	0.54	30.45
104.01	158.16	158.69	159.51	160.35	159.52	0.65	30.93
105.66	158.30	158.71	159.67	160.67	159.68	0.77	31.42
108.00	158.33	158.71	159.70	160.73	159.71	0.79	31.52
107.35	158.44	158.73	159.83	160.99	159.85	0.88	31.92
109.08	158.58	158.74	159.99	161.32	160.01	1.01	32.44
110.86	158.72	158.73	160.15	161.65	160.18	1.14	32.97
111.00	158.73	158.73	160.16	161.68	160.19	1.15	33.01
112.89	158.86	158.71	160.30	162.01	160.34	1.29	33.51
114.56	159.00	158.64	160.46	162.38	160.49	1.46	34.07
115.99	159.11	158.56	160.57	162.68	160.60	1.61	34.49
116.49	159.14	158.53	160.61	162.78	160.64	1.66	34.64
113.46	159.29	158.46	160.76	163.21	160.81	1.85	35.23
120.49	159.44	158.51	160.91	163.66	161.02	2.01	35.83
121.00	159.47	158.52	160.95	163.77	161.07	2.05	35.98
122.57	159.59	158.57	161.06	164.11	161.23	2.17	36.45
124.71	159.74	158.53	161.22	164.54	161.45	2.32	37.08
125.99	159.82	158.67	161.31	164.80	161.57	2.40	37.47
126.90	159.89	158.69	161.38	164.97	161.66	2.45	37.74
129.15	160.04	158.76	161.55	165.38	161.88	2.60	38.41
131.00	160.16	158.82	161.69	165.70	162.05	2.70	38.95
131.47	160.19	158.84	161.73	165.78	162.09	2.73	39.09
133.84	160.35	158.92	161.91	166.18	162.31	2.85	39.80
136.00	160.49	159.00	162.07	166.54	162.51	2.97	40.44
136.28	160.50	159.01	162.09	166.59	162.53	2.98	40.52
138.78	160.66	159.10	162.28	167.00	162.76	3.11	41.27
141.00	160.80	159.17	162.45	167.36	162.96	3.22	41.93
141.35	160.82	159.18	162.47	167.42	162.99	3.24	42.03
143.99	160.98	159.28	162.67	167.83	163.22	3.37	42.82
145.99	161.10	159.35	162.82	168.14	163.40	3.46	43.41
146.70	161.14	159.38	162.87	168.24	163.46	3.49	43.62

149.48	161.31	159.48	163.07	163.66	163.70	3.62	44.45
150.99	161.39	159.53	163.19	168.88	163.82	3.68	44.90
152.33	161.47	159.58	163.28	169.08	163.94	3.74	45.30
155.25	161.64	159.68	163.50	169.50	164.18	3.87	46.17
155.99	161.68	159.71	163.55	169.61	164.24	3.90	46.39
158.26	161.80	159.79	163.71	169.94	164.43	4.00	47.06
161.00	161.95	159.88	163.91	170.33	164.65	4.12	47.87
161.33	161.97	159.89	163.94	170.38	164.68	4.14	47.97
164.49	162.14	159.99	164.16	170.86	164.95	4.29	48.91
165.99	162.22	160.04	164.27	171.09	165.08	4.36	49.36
167.73	162.31	160.10	164.39	171.35	165.22	4.44	49.88
171.00	162.47	160.20	164.53	171.84	165.50	4.60	50.85
171.06	162.48	160.20	164.63	171.85	165.50	4.60	50.87
174.46	162.65	160.30	164.88	172.36	165.78	4.76	51.88
175.99	162.72	160.35	164.98	172.58	165.91	4.83	52.33
177.95	162.82	160.41	165.12	172.87	166.07	4.92	52.92
180.99	162.97	160.49	165.34	173.35	166.32	5.08	53.82
181.53	162.99	160.50	165.30	173.43	166.37	5.11	53.98
185.19	163.16	160.60	165.64	174.02	166.68	5.30	55.07
185.99	163.20	160.62	165.70	174.15	166.75	5.35	55.31
188.95	163.34	160.69	165.92	174.63	167.01	5.51	56.19
190.99	163.43	160.74	166.06	174.96	167.18	5.62	56.79
192.80	163.51	160.73	166.19	175.26	167.32	5.74	57.33
195.99	163.66	160.64	166.35	175.82	167.53	6.00	58.28
196.74	163.69	160.61	166.39	175.95	167.57	6.06	58.50
200.78	163.87	160.44	166.68	176.84	167.90	6.47	59.70
201.00	163.88	160.43	166.71	176.89	167.93	6.50	59.77
204.93	164.04	160.55	167.18	177.51	168.34	6.68	60.94
206.00	164.09	160.56	167.28	177.65	168.42	6.73	61.28
209.21	164.22	160.42	167.19	177.66	168.35	6.79	62.21
211.00	164.30	160.21	166.86	177.37	168.06	6.77	62.74
213.65	164.41	159.80	166.35	176.94	167.61	6.76	63.83
216.00	164.50	159.53	166.41	177.07	167.59	6.91	64.23
216.78	164.53	159.48	166.62	177.30	167.72	7.01	64.43
218.44	164.60	159.42	167.47	178.20	168.31	7.36	64.96
219.49	164.64	159.43	168.30	179.07	168.89	7.68	65.27
220.23	164.67	159.45	168.99	179.78	169.38	7.95	65.49
220.78	164.69	159.47	169.54	180.35	169.77	8.16	65.65
221.00	164.70	159.48	169.75	180.57	169.92	8.24	65.72
221.22	164.71	159.49	169.97	180.79	170.07	8.32	65.78
221.57	164.72	159.52	170.29	181.13	170.31	8.44	65.89
221.86	164.73	159.54	170.55	181.39	170.50	8.54	65.97
221.88	164.73	159.54	170.56	181.41	170.51	8.54	65.98
223.01	164.78	161.66	173.96	181.65	173.52	9.07	66.32
225.82	164.89	169.00	182.36	181.33	181.89	9.16	
228.00	164.97	177.69	190.35	181.36	189.83	9.25	
229.00	165.01	181.28	194.01	205.05	193.48	9.29	
230.00	165.05	184.87	197.67	208.74	197.13	9.33	
231.00	165.08	187.37	200.24	211.33	199.69	9.37	
232.00	165.12	189.01	201.95	213.07	201.38	9.41	
233.00	165.16	190.47	203.46	214.62	202.89	9.44	

RUN NO. 26

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 39 NMI

OBST HT. DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 370 N-UNITS

CLIMATE: MARITIME SUBTROPICAL (3)

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.61	135.66	135.60	135.75	135.90	135.75	0.12	1.67
9.47	138.57	138.54	138.69	138.85	138.69	0.12	2.82
15.06	141.90	141.93	142.08	142.23	142.08	0.12	4.48
18.71	143.60	143.68	143.83	143.98	143.83	0.12	5.56
24.47	145.79	145.94	146.08	146.24	146.09	0.12	7.28
30.66	147.67	147.89	148.04	148.20	148.04	0.12	9.12
35.91	149.01	149.29	149.44	149.60	149.44	0.12	10.68
40.87	150.11	150.46	150.61	150.76	150.61	0.12	12.15
45.99	151.12	151.53	151.68	151.83	151.68	0.12	13.68
50.67	151.95	152.42	152.57	152.72	152.57	0.12	15.07
55.77	152.78	153.31	153.46	153.61	153.46	0.12	16.58
60.46	153.47	154.06	154.21	154.37	154.22	0.12	17.98
65.95	154.22	154.88	155.04	155.19	155.04	0.12	19.61
70.81	154.84	155.56	155.72	155.88	155.72	0.12	21.06
75.84	155.43	156.22	156.38	156.54	156.36	0.13	22.55
80.78	155.97	156.82	156.99	157.16	156.99	0.13	24.02
85.79	156.50	157.40	157.58	157.76	157.58	0.14	25.51
90.65	156.97	157.93	158.13	158.33	158.13	0.15	26.96
96.00	157.47	158.47	158.70	158.93	158.70	0.18	28.55
100.94	157.90	158.66	159.21	159.78	159.22	0.44	30.02
102.36	158.02	158.69	159.35	160.05	159.36	0.53	30.44
104.04	158.17	158.72	159.51	160.36	159.53	0.64	30.94
105.77	158.31	158.75	159.68	160.68	159.70	0.75	31.45
106.00	158.33	158.75	159.70	160.72	159.72	0.77	31.52
107.54	158.45	158.78	159.84	161.00	159.87	0.87	31.98
109.36	158.60	158.81	160.00	161.33	160.05	0.98	32.52
111.00	158.73	158.83	160.15	161.62	160.20	1.09	33.01
111.24	158.74	158.84	160.17	161.66	160.22	1.10	33.08
113.16	158.89	158.85	160.33	162.00	160.39	1.23	33.65
115.15	159.04	158.84	160.49	162.35	160.55	1.38	34.24
115.99	159.11	159.03	160.55	162.50	160.62	1.44	34.49
117.18	159.20	158.80	160.64	162.72	160.71	1.53	34.85
119.28	159.35	158.74	160.79	163.10	160.87	1.71	35.47
120.99	159.47	158.68	160.90	163.42	160.99	1.85	35.95
121.43	159.50	158.66	160.93	163.50	161.02	1.89	36.11
123.85	159.66	158.56	161.08	163.90	161.17	2.09	36.77
125.93	159.82	158.60	161.24	164.29	161.37	2.22	37.45
126.00	159.82	158.61	161.24	164.30	161.37	2.23	37.47
128.28	159.98	158.67	161.40	164.68	161.57	2.35	38.15
130.70	160.14	158.73	161.57	165.08	161.78	2.48	38.86
131.00	160.16	158.74	161.59	165.13	161.81	2.50	38.95
133.18	160.31	158.81	161.75	165.47	161.99	2.61	39.60
135.74	160.47	158.90	161.93	165.85	162.21	2.73	40.36
136.00	160.49	158.90	161.95	165.89	162.23	2.74	40.44
138.37	160.64	158.98	162.11	166.24	162.42	2.85	41.15
141.00	160.80	159.05	162.30	166.60	162.64	2.97	41.93
141.02	160.80	159.07	162.30	166.64	162.65	2.97	41.95
143.86	160.97	159.15	162.50	167.04	162.87	3.10	42.78
146.00	161.10	159.22	162.65	167.34	163.04	3.19	43.41
146.73	161.15	159.25	162.70	167.44	163.10	3.22	43.63
149.68	161.32	159.35	162.90	167.85	163.33	3.34	44.51

150.99	161.39	159.39	162.99	163.03	163.44	3.39	44.90
152.71	161.49	159.44	163.10	168.26	163.57	3.46	45.41
155.83	161.67	159.54	163.31	168.68	163.81	3.59	46.34
156.00	161.68	159.55	163.33	168.70	163.82	3.59	46.39
159.04	161.84	159.64	163.53	169.10	164.05	3.72	47.28
160.99	161.95	159.70	163.66	169.36	164.20	3.80	47.87
162.34	162.02	159.74	163.75	169.54	164.30	3.85	48.27
165.74	162.20	159.83	163.96	169.98	164.55	3.99	49.28
166.00	162.22	159.83	163.98	170.02	164.57	4.00	49.36
169.23	162.38	159.91	164.18	170.44	164.80	4.14	50.32
170.99	162.47	159.95	164.28	170.67	164.92	4.21	50.85
172.81	162.56	159.99	164.39	170.91	165.05	4.29	51.39
175.99	162.72	160.05	164.58	171.33	165.27	4.44	52.33
176.50	162.75	160.06	164.61	171.40	165.31	4.46	52.48
180.29	162.93	160.14	164.83	171.90	165.57	4.63	53.61
180.99	162.97	160.15	164.87	171.99	165.62	4.66	53.82
184.18	163.12	160.20	165.06	172.43	165.84	4.81	54.77
185.99	163.20	160.23	165.16	172.70	165.97	4.91	55.31
188.17	163.30	160.26	165.29	173.02	166.13	5.03	55.96
191.00	163.43	160.30	165.45	173.43	166.33	5.17	56.79
192.28	163.49	160.31	165.52	173.62	166.42	5.24	57.18
195.99	163.66	160.36	165.74	174.17	166.69	5.44	58.28
196.49	163.68	160.35	165.77	174.25	166.72	5.48	59.43
200.82	163.87	160.24	166.01	174.96	167.00	5.80	59.72
201.00	163.88	160.23	166.02	174.98	167.01	5.81	59.77
205.26	164.06	160.05	166.22	175.73	167.26	6.17	61.04
205.99	164.09	160.01	166.26	175.87	167.31	6.25	61.25
209.82	164.25	160.11	166.52	176.25	167.55	6.35	62.39
210.99	164.30	160.14	166.64	176.38	167.65	6.39	62.74
214.51	164.44	160.23	167.03	176.85	167.97	6.53	63.79
216.00	164.50	160.23	167.14	176.99	168.06	6.59	64.23
219.35	164.63	160.05	167.01	176.95	167.94	6.54	65.23
221.00	164.70	159.86	166.73	176.71	167.70	6.62	65.72
224.38	164.83	159.37	166.10	176.17	167.14	6.61	66.72
226.00	164.89	159.16	166.03	176.10	167.04	6.68	67.20
227.91	164.97	158.97	166.34	176.49	167.21	6.87	67.77
229.78	165.04	158.87	167.19	177.39	167.78	7.25	68.33
230.96	165.08	158.96	168.03	178.26	168.39	7.54	68.68
231.00	165.08	158.98	168.06	178.29	168.42	7.55	68.69
231.79	165.11	159.60	168.74	178.99	169.08	7.58	68.93
232.41	165.14	160.12	169.30	179.57	169.64	7.60	69.11
232.89	165.15	160.52	169.74	180.02	170.07	7.62	69.25
233.29	165.17	160.84	170.08	180.37	170.41	7.63	69.37
233.61	165.18	161.08	170.34	180.64	170.66	7.65	69.47
233.68	165.18	161.12	170.39	180.69	170.71	7.65	69.49
234.90	165.23	164.33	173.69	184.05	174.00	7.70	69.85
235.99	165.27	167.26	176.66	187.04	176.96	7.73	70.18
238.01	165.34	172.33	182.01	192.53	182.27	7.89	
241.00	165.45	177.88	197.98	198.75	188.19	8.16	
242.00	165.49	179.86	190.23	201.10	190.39	8.30	
243.00	165.52	181.56	192.09	203.06	192.23	8.40	
244.00	165.56	183.08	193.70	204.75	193.84	8.47	
245.00	165.59	184.30	195.11	206.25	195.21	8.57	
246.00	165.63	185.34	196.37	207.60	196.43	8.70	

RUN NO. 27

JINSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 39 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT (4) SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: DETERMINED AT 4 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N UNITS

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.67	135.70	135.6	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.79
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.54
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.58
24.05	145.65	145.78	145.93	145.08	145.93	0.12	7.15
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.14
35.94	149.02	149.29	149.44	149.60	149.44	0.12	10.69
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.19
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.63
50.69	151.96	152.41	152.57	152.72	152.57	0.12	15.07
55.98	152.81	153.34	153.49	153.65	153.49	0.12	16.65
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.99
65.74	154.20	154.86	155.01	155.17	155.01	0.12	19.55
70.82	154.84	155.57	155.72	155.89	155.73	0.13	21.06
75.63	155.44	156.24	156.40	156.58	156.41	0.13	22.58
80.77	155.97	156.84	157.01	157.19	157.02	0.14	24.02
85.87	156.50	157.44	157.63	157.83	157.63	0.15	25.54
90.69	156.98	157.96	158.18	158.41	158.18	0.17	26.97
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.54
100.95	157.90	158.74	159.30	159.88	159.31	0.45	30.02
102.17	158.01	158.77	159.43	160.12	159.44	0.53	30.58
103.72	158.14	158.81	159.60	160.44	159.61	0.64	30.85
105.33	158.27	158.84	159.77	160.76	159.79	0.75	31.32
106.00	158.33	158.85	159.83	160.90	159.86	0.80	31.52
106.97	158.41	158.87	159.94	161.10	159.97	0.87	31.81
108.65	158.54	158.90	160.11	161.44	160.15	0.99	32.31
110.38	158.68	158.92	160.30	161.61	160.34	1.13	32.82
111.00	158.73	158.92	160.36	161.95	160.41	1.18	33.01
112.14	158.81	158.93	160.49	162.20	160.53	1.28	33.35
113.95	158.95	158.90	160.68	162.63	160.73	1.45	33.89
115.81	159.09	158.85	160.89	163.10	160.94	1.56	34.44
116.00	159.11	159.84	160.91	163.15	160.95	1.58	34.49
117.72	159.24	158.82	161.09	163.61	161.17	1.37	35.00
119.67	159.38	158.93	161.30	164.14	161.45	2.04	35.59
121.00	159.47	159.00	161.44	164.50	161.63	2.15	35.98
121.67	159.52	159.04	161.51	164.67	161.73	2.21	36.16
123.72	159.67	159.15	161.71	165.17	161.99	2.36	36.79
125.83	159.81	159.24	161.91	165.65	162.24	2.51	37.42
126.00	159.82	159.25	161.92	165.68	162.26	2.52	37.47
127.99	159.96	159.34	162.10	166.10	162.49	2.56	38.00
130.21	160.11	159.43	162.29	166.55	162.73	2.80	38.72
130.99	160.16	159.46	162.36	166.71	162.81	2.85	39.05
132.48	160.26	159.53	162.49	166.99	162.97	2.94	39.39
134.81	160.41	159.63	162.68	167.42	163.21	3.07	40.09
135.99	160.49	159.67	162.78	167.63	163.32	3.14	40.44
137.20	160.56	159.72	162.87	167.85	163.44	3.20	40.80
139.65	160.72	159.82	163.07	168.27	163.69	3.33	41.53
140.99	160.00	159.87	163.18	168.50	163.81	3.41	41.93
142.16	160.87	159.91	163.27	168.70	163.92	3.47	42.27
144.74	161.03	160.02	163.48	169.11	164.11	3.59	43.04
145.99	161.10	160.07	163.57	169.32	164.27	3.65	43.31

147.37	161.18	160.13	163.68	169.53	164.40	3.71	43.82
150.08	161.34	160.23	163.89	169.96	164.64	3.84	44.63
151.00	161.39	160.27	163.97	170.11	164.73	3.89	44.90
152.85	161.50	160.34	164.11	170.42	164.90	3.98	45.45
155.70	161.66	160.45	164.33	170.89	165.17	4.13	46.30
156.00	161.68	160.46	164.35	170.94	165.20	4.14	46.39
158.61	161.82	160.56	164.56	171.37	165.44	4.27	47.16
160.99	161.95	160.65	164.74	171.76	165.66	4.39	47.87
161.59	161.98	160.68	164.79	171.86	165.71	4.42	48.05
164.65	162.14	160.79	165.03	172.35	165.99	4.57	48.96
165.98	162.22	160.84	165.13	172.56	166.11	4.64	49.36
167.77	162.31	160.91	165.27	172.84	166.27	4.72	49.89
170.98	162.47	161.03	165.53	173.35	166.56	4.88	50.84
171.00	162.47	161.03	165.53	173.35	166.57	4.88	50.85
174.26	162.64	161.15	165.79	173.91	166.88	5.05	51.82
175.99	162.72	161.21	165.93	174.20	167.04	5.14	52.33
177.62	162.80	161.27	166.06	174.50	167.20	5.24	52.82
181.00	162.97	161.39	166.33	175.12	167.53	5.44	53.82
181.05	162.97	161.39	166.34	175.13	167.54	5.44	53.84
184.57	163.14	161.51	166.63	175.77	167.88	5.65	54.88
185.99	163.20	161.56	166.75	176.02	168.02	5.73	55.31
188.17	163.30	161.63	166.92	176.40	168.23	5.86	55.96
190.99	163.43	161.61	167.13	176.92	168.46	6.06	56.79
191.86	163.47	161.60	167.19	177.10	168.54	6.14	57.05
195.63	163.64	161.56	167.55	177.96	168.93	6.49	58.17
196.00	163.66	161.55	167.60	178.07	168.98	6.54	58.28
199.51	163.81	161.58	168.12	178.97	169.47	6.87	59.33
201.00	163.88	161.62	168.28	179.19	169.61	6.93	59.77
203.50	163.98	161.54	168.22	179.20	169.56	6.97	60.51
206.00	164.09	161.25	167.74	178.80	169.17	6.94	61.26
207.64	164.16	161.03	167.47	178.58	168.93	6.94	61.74
210.56	164.28	160.79	167.81	179.04	169.12	7.20	62.61
211.00	164.30	160.78	168.00	179.26	169.25	7.28	62.74
212.12	164.34	160.79	168.69	180.00	169.75	7.54	63.08
213.10	164.38	160.83	169.54	180.89	170.36	7.86	63.37
213.80	164.41	160.87	170.23	181.62	170.96	8.12	63.57
214.32	164.45	160.91	170.78	182.19	171.26	8.12	63.73
214.72	164.45	160.95	171.21	182.63	171.57	8.47	63.85
215.05	164.46	160.98	171.54	182.98	171.82	8.59	63.95
215.32	164.47	161.02	171.79	183.28	172.02	8.70	64.03
215.32	164.47	161.02	171.80	183.28	172.02	8.70	64.03
216.00	164.50	161.83	172.94	185.45	173.76	9.23	64.23
216.41	164.52	163.12	175.26	186.78	175.07	9.24	64.35
219.06	164.62	171.44	183.70	195.31	183.50	9.32	
222.00	164.74	182.63	195.08	206.78	194.84	9.44	
223.00	164.78	186.44	198.90	210.69	198.71	9.47	
224.00	164.82	190.26	202.83	214.58	202.57	9.50	
225.00	164.85	194.07	206.71	218.48	206.44	9.54	
226.00	164.89	196.18	208.88	220.68	208.60	9.57	
227.00	164.93	197.57	210.32	222.17	210.04	9.61	

RUN NO. 28

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: CONTINENTAL TEMPERATE (6)

SURFACE REFLECTION LOBBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

QST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 320 N-UNITS

SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.69	147.90	148.05	148.20	148.05	0.12	9.13
36.99	149.03	149.30	149.45	149.60	149.45	0.12	10.70
40.97	150.13	150.46	150.61	150.77	150.62	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.96	152.40	152.55	152.71	152.56	0.12	15.07
55.91	152.80	153.31	153.47	153.62	153.47	0.12	16.63
60.48	153.48	154.04	154.20	154.36	154.20	0.12	17.99
65.79	154.20	154.83	155.00	155.16	155.00	0.13	19.56
70.81	154.84	155.53	155.70	155.86	155.70	0.13	21.06
75.91	155.44	156.19	156.37	156.54	156.37	0.14	22.57
80.77	155.97	156.77	156.97	157.16	156.97	0.15	24.02
85.86	156.50	157.35	157.56	157.77	157.57	0.17	25.55
90.67	156.87	157.85	158.12	158.34	158.10	0.19	26.96
95.97	157.47	158.35	158.69	158.95	158.67	0.23	28.54
100.94	157.90	158.57	159.20	159.77	159.18	0.47	30.02
102.41	158.03	158.60	159.34	160.04	159.33	0.56	30.45
104.01	158.16	158.62	159.50	160.35	159.49	0.67	30.93
105.66	158.30	158.64	159.66	160.66	159.65	0.79	31.42
106.00	158.33	158.64	159.69	160.73	159.69	0.81	31.52
107.35	158.44	158.65	159.82	160.98	159.82	0.91	31.92
109.08	158.58	158.65	159.98	161.31	159.98	1.04	32.44
110.86	158.72	158.64	160.13	161.64	160.14	1.17	32.97
111.00	158.73	158.64	160.15	161.67	160.15	1.19	33.01
112.69	158.86	158.59	160.29	161.99	160.29	1.33	33.51
114.56	159.00	159.48	160.44	162.36	160.43	1.52	34.07
115.99	159.11	158.38	160.56	162.66	160.53	1.67	34.49
116.49	159.14	158.39	160.59	162.76	160.58	1.70	34.64
118.46	159.29	158.44	160.74	163.18	160.78	1.85	35.23
120.49	159.44	158.49	160.88	163.62	160.99	2.01	35.83
121.00	159.47	158.50	160.92	163.73	161.04	2.05	35.98
122.57	159.59	158.54	161.03	164.07	161.20	2.16	36.45
124.71	159.74	158.60	161.19	164.50	161.41	2.31	37.08
125.99	159.82	158.64	161.28	164.75	161.54	2.40	37.47
126.90	159.89	158.66	161.35	164.92	161.63	2.45	37.74
129.15	160.04	158.73	161.52	165.33	161.84	2.59	38.41
131.00	160.16	159.79	161.08	165.65	162.01	2.69	38.95
131.47	160.19	158.81	161.70	165.73	162.05	2.72	39.09
133.84	160.35	158.89	161.88	166.12	162.27	2.84	39.80
136.00	160.49	158.97	162.04	166.46	162.46	2.94	40.44
136.28	160.50	158.98	162.06	166.51	162.49	2.96	40.52
138.78	160.66	159.07	162.25	166.91	162.71	3.08	41.27
141.00	160.80	159.15	162.42	167.27	162.91	3.19	41.93
141.35	160.82	159.16	162.45	167.32	162.94	3.21	42.03
143.99	160.96	159.25	162.65	167.73	163.17	3.34	42.62
145.99	161.10	159.33	162.79	168.04	163.35	3.43	43.41
146.70	161.14	159.36	162.85	168.14	163.41	3.46	43.62

149.48	161.31	159.46	163.05	168.56	163.65	3.58	44.45
150.99	161.39	159.51	163.17	168.78	163.78	3.65	44.90
152.33	161.47	159.56	163.26	168.98	163.89	3.71	45.30
155.25	161.64	159.67	163.48	169.40	164.14	3.83	46.17
155.99	161.68	159.69	163.53	169.51	164.20	3.87	46.39
158.26	161.80	159.77	163.70	169.83	164.39	3.96	47.06
161.00	161.95	159.87	163.90	170.22	164.61	4.08	47.87
161.33	161.97	159.88	163.92	170.27	164.64	4.10	47.97
164.49	162.14	159.98	164.15	170.73	164.90	4.23	48.91
165.99	162.22	160.03	164.26	170.94	165.03	4.30	49.36
167.73	162.31	160.09	164.39	171.19	165.17	4.38	49.88
171.00	162.47	160.19	164.62	171.68	165.44	4.53	50.85
171.06	162.48	160.19	164.63	171.69	165.45	4.53	50.87
174.46	162.65	160.30	164.87	172.19	165.73	4.69	51.68
175.99	162.72	160.35	164.98	172.42	165.86	4.76	52.33
177.95	162.82	160.41	165.12	172.71	166.02	4.85	52.92
180.99	162.97	160.49	165.34	173.19	166.28	5.01	53.82
181.53	162.99	160.50	165.38	173.27	166.32	5.04	53.98
185.19	163.16	160.60	165.64	173.87	166.64	5.24	55.07
185.99	163.20	160.62	165.70	174.00	166.70	5.28	55.31
188.95	163.34	160.69	165.92	174.48	166.96	5.44	56.19
190.99	163.43	160.74	166.06	174.61	167.13	5.55	56.79
192.80	163.51	160.73	166.19	175.12	167.27	5.68	57.33
195.99	163.66	160.64	166.36	175.65	167.47	5.92	58.28
195.74	163.69	160.67	166.40	175.77	167.52	5.98	58.50
200.78	163.87	160.44	166.69	176.63	167.84	6.38	59.70
201.00	163.88	160.43	166.71	176.69	167.87	6.41	59.77
204.93	164.04	160.56	167.19	177.29	168.27	6.58	60.94
206.00	164.09	160.58	167.29	177.42	168.36	6.63	61.26
209.21	164.22	160.44	167.21	177.44	168.29	6.69	62.21
211.00	164.30	160.22	166.88	177.16	168.01	6.67	62.74
213.85	164.41	159.82	166.37	176.73	167.56	6.66	63.53
216.00	164.50	159.55	166.43	176.86	167.54	6.81	64.23
216.78	164.53	159.50	166.64	177.09	167.67	6.92	64.46
218.44	164.60	159.45	167.49	178.00	168.26	7.27	64.96
219.49	164.64	159.45	168.33	178.86	168.84	7.59	65.27
220.23	164.67	159.47	169.02	179.57	169.33	7.86	65.49
220.78	164.69	159.50	169.57	180.14	169.72	8.06	65.65
221.00	164.70	159.51	169.78	180.36	169.88	8.15	65.72
221.22	164.71	159.52	169.99	180.58	170.03	8.23	65.78
221.57	164.72	159.71	170.32	180.92	170.32	8.29	65.89
221.86	164.73	159.94	170.57	181.19	170.57	8.30	65.97
221.88	164.73	159.96	170.59	181.21	170.59	8.30	65.98
223.01	164.78	163.24	173.98	184.65	173.96	8.36	66.32
225.82	164.89	171.49	182.39	193.12	182.34	8.45	
228.00	164.97	179.39	190.38	201.16	190.31	8.51	
229.00	165.01	183.02	194.04	204.85	193.97	8.53	
230.00	165.05	186.65	197.71	208.54	197.64	8.55	
231.00	165.08	189.18	200.27	211.13	200.20	8.57	
232.00	165.12	190.86	201.98	212.86	201.90	8.59	
233.00	165.16	192.35	203.49	214.39	203.42	8.61	



RUN NO. 29

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TYPE: ISOTROPIC

OBST HGT: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 320 N-UNITS

CLIMATE: MARITIME TEMPERATE OVERLAND (?)

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.69	147.90	148.05	148.20	148.05	0.12	9.13
35.99	149.03	149.30	149.45	149.61	149.45	0.12	10.70
40.97	150.13	150.47	150.62	150.77	150.62	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.58	151.96	152.41	152.56	152.71	152.56	0.12	15.07
55.91	152.80	153.32	153.47	153.62	153.47	0.12	16.63
60.48	153.48	154.05	154.20	154.36	154.21	0.12	17.99
65.79	154.20	154.85	155.00	155.16	155.00	0.12	19.56
70.81	154.84	155.55	155.70	155.86	155.71	0.12	21.06
75.91	155.44	156.22	156.38	156.54	156.38	0.12	22.57
80.77	155.97	156.82	156.98	157.15	156.98	0.13	24.02
85.85	156.50	157.42	157.59	157.76	157.59	0.13	25.53
90.67	156.97	157.35	158.13	158.31	158.13	0.14	26.96
95.07	157.47	158.51	158.71	158.90	158.71	0.16	28.54
100.94	157.90	158.73	159.23	159.74	159.23	0.40	30.02
102.41	158.03	158.76	159.38	160.02	159.39	0.49	30.45
104.01	158.16	158.79	159.54	160.33	159.55	0.60	30.93
105.66	158.30	158.83	159.70	160.64	159.72	0.71	31.42
106.00	158.33	158.83	159.73	160.71	159.76	0.73	31.52
107.35	158.44	158.86	159.87	160.96	159.90	0.82	31.92
109.08	158.58	158.91	160.03	161.29	160.07	0.93	32.44
110.88	158.72	158.94	160.20	161.62	160.25	1.04	32.97
111.00	158.73	158.95	160.21	161.64	160.26	1.05	33.01
112.69	158.86	158.98	160.37	161.95	160.43	1.16	33.51
114.56	159.00	159.01	160.54	162.30	160.61	1.29	34.07
115.99	159.11	159.02	160.67	162.57	160.75	1.39	34.49
116.49	159.14	159.02	160.72	162.66	160.79	1.42	34.64
118.46	159.29	159.03	160.89	163.04	160.98	1.57	35.23
120.49	159.44	158.99	161.07	163.43	161.16	1.73	35.83
121.00	159.47	158.98	161.11	163.53	161.20	1.78	35.98
122.57	159.59	158.97	161.25	163.82	161.34	1.90	36.45
124.71	159.74	158.95	161.43	164.22	161.53	2.06	37.08
125.99	159.82	158.95	161.54	164.45	161.64	2.15	37.47
126.90	159.89	158.95	161.62	164.61	161.72	2.21	37.74
129.15	160.04	159.02	161.81	165.00	161.94	2.34	38.41
131.00	160.16	159.10	161.97	165.30	162.11	2.43	38.95
131.47	160.19	159.12	162.01	165.36	162.16	2.45	39.09
133.84	160.35	159.22	162.21	165.77	162.39	2.56	39.80
136.00	160.49	159.32	162.39	166.12	162.59	2.66	40.44
136.28	160.50	159.33	162.41	166.16	162.62	2.67	40.52
138.78	160.66	159.44	162.62	166.56	162.86	2.79	41.27
141.00	160.80	159.53	162.80	166.91	163.06	2.89	41.93
141.35	160.82	159.54	162.83	166.96	163.09	2.91	42.03
143.99	160.98	159.65	163.05	167.37	163.34	3.02	42.82
145.99	161.10	159.74	163.21	167.69	163.52	3.11	43.41
146.70	161.14	159.78	163.27	167.79	163.59	3.14	43.62

149.48	161.31	159.90	163.49	168.21	163.84	3.26	44.45
150.99	161.39	159.96	163.61	168.44	163.88	3.32	44.90
152.33	161.47	160.02	163.72	168.64	164.10	3.38	45.30
155.25	161.64	160.14	163.95	169.08	164.36	3.50	46.17
155.99	161.68	160.17	164.01	169.19	164.43	3.54	46.39
158.26	161.80	160.26	164.19	169.52	164.63	3.63	47.06
161.00	161.95	160.37	164.41	169.92	164.87	3.75	47.87
161.33	161.97	160.39	164.44	169.97	164.90	3.76	47.97
164.49	162.14	160.51	164.68	170.47	165.18	3.91	48.91
165.99	162.22	160.57	164.80	170.70	165.32	3.98	49.36
167.73	162.31	160.64	164.94	170.97	165.48	4.06	49.88
171.00	162.47	160.76	165.19	171.48	165.77	4.21	50.85
171.06	162.48	160.76	165.20	171.49	165.78	4.21	50.87
174.46	162.65	160.89	165.46	172.02	166.08	4.37	51.88
175.99	162.72	160.95	165.58	172.25	166.22	4.44	52.33
177.95	162.82	161.02	165.73	172.55	166.39	4.53	52.92
180.99	162.97	161.12	165.97	173.06	166.66	4.69	53.82
181.53	162.99	161.13	166.01	173.15	166.71	4.72	53.98
185.19	163.10	161.20	166.29	173.77	167.05	4.93	55.07
185.99	163.20	161.27	166.35	173.91	167.13	4.97	55.31
188.95	163.34	161.26	166.59	174.44	167.41	5.15	56.19
190.99	163.43	161.42	166.75	174.80	167.60	5.27	56.79
192.80	163.51	161.42	166.88	175.14	167.76	5.40	57.33
195.99	163.66	161.38	167.09	175.75	168.01	5.66	58.28
196.74	163.69	161.36	167.14	175.89	168.07	5.72	58.50
200.78	163.87	161.25	167.49	176.83	168.46	6.13	59.70
201.00	163.88	161.24	167.52	176.89	168.48	6.16	59.77
204.93	164.04	161.42	168.05	177.54	168.94	6.33	60.94
206.00	164.09	161.45	168.17	177.68	169.04	6.37	61.26
209.21	164.22	161.35	168.13	177.71	169.00	6.42	62.21
211.00	164.30	161.17	167.82	177.46	168.75	6.41	62.74
213.65	164.41	160.80	167.34	177.06	168.34	6.40	63.53
216.00	164.50	160.56	167.43	177.25	168.35	6.55	64.23
216.78	164.53	160.52	167.66	177.49	168.50	6.66	64.46
218.44	164.60	160.49	168.53	178.42	169.11	7.02	64.96
219.49	164.64	161.25	169.38	179.30	169.94	7.07	65.27
220.23	164.67	161.90	170.08	180.03	170.63	7.09	65.49
220.78	164.69	162.41	170.63	180.60	171.18	7.12	65.65
221.00	164.70	162.60	170.85	180.82	171.39	7.13	65.72
221.22	164.71	162.80	171.07	181.05	171.60	7.14	65.78
221.57	164.72	163.10	171.40	181.39	171.92	7.16	65.89
221.86	164.73	163.33	171.66	181.67	172.18	7.17	65.97
221.88	164.73	163.35	171.68	181.69	172.20	7.17	65.98
223.01	164.78	166.65	175.09	185.14	175.59	7.23	66.32
225.82	164.89	174.93	183.52	193.66	184.01	7.32	
228.00	164.97	182.84	191.53	201.73	192.00	7.38	
229.00	165.01	186.48	195.21	205.43	195.08	7.41	
230.00	165.05	180.12	198.89	209.13	199.35	7.43	
231.00	165.08	192.66	201.46	211.73	201.92	7.46	
232.00	165.12	194.35	203.18	213.49	203.64	7.49	
233.00	165.16	195.85	204.71	215.06	205.17	7.51	

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL  
 FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: MARITIME TEMPERATE OVERSEA (8)  
 SURFACE REFLECTION LOBBING: DETERMINES MEDIAN

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST INT: DETERMINED AT 4 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 320 N-UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.89	147.90	148.05	148.20	148.05	0.12	9.13
35.99	149.03	149.30	149.45	149.60	149.45	0.12	10.70
40.97	150.13	150.46	150.61	150.77	150.61	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.96	152.40	152.55	152.71	152.55	0.12	15.07
55.91	152.80	153.31	153.46	153.62	153.47	0.12	16.63
60.48	153.48	154.05	154.20	154.35	154.20	0.12	17.99
65.79	154.20	154.84	154.99	155.15	154.99	0.12	19.56
70.81	154.84	155.54	155.70	155.85	155.70	0.12	21.05
75.91	155.44	156.20	156.37	156.53	156.36	0.13	22.57
80.77	155.97	156.79	156.97	157.13	156.97	0.13	24.02
85.65	156.50	157.38	157.57	157.74	157.56	0.14	25.53
90.67	156.97	157.90	158.11	158.30	158.10	0.16	26.96
95.97	157.47	158.42	158.66	158.89	158.66	0.18	28.54
100.94	157.90	158.63	159.18	159.71	159.18	0.42	30.02
102.41	156.03	158.66	159.33	159.99	159.33	0.52	30.45
104.01	158.16	158.69	159.48	160.29	159.49	0.63	30.93
105.66	158.30	158.71	159.64	160.60	159.65	0.71	31.42
106.00	158.33	158.72	159.67	160.66	159.68	0.73	31.52
107.35	158.44	158.73	159.80	160.91	159.81	0.85	31.92
109.08	158.58	158.75	159.95	161.23	159.98	0.97	32.44
110.86	158.72	158.76	160.11	161.55	160.14	1.09	32.97
111.00	158.73	158.76	160.12	161.57	160.15	1.10	33.01
112.69	158.86	158.74	160.26	161.87	160.29	1.22	33.51
114.56	159.00	158.69	160.40	162.21	160.43	1.38	34.07
115.99	159.11	158.62	160.51	162.47	160.53	1.50	34.49
116.49	159.14	158.59	160.54	162.56	160.56	1.55	34.64
118.46	159.29	158.46	160.68	162.93	160.69	1.75	35.23
120.49	159.44	158.41	160.81	163.31	160.84	1.91	35.83
121.00	159.47	158.42	160.85	163.41	160.89	1.95	35.98
122.57	159.59	158.45	160.95	163.70	161.03	2.05	36.45
124.71	159.74	158.51	161.10	164.09	161.22	2.18	37.08
125.99	159.82	158.54	161.19	164.32	161.34	2.26	37.47
126.90	159.89	158.56	161.25	164.48	161.42	2.32	37.74
129.15	160.04	158.62	161.41	164.87	161.62	2.45	38.41
131.00	160.16	158.67	161.55	165.19	161.79	2.55	38.95
131.47	160.19	158.69	161.58	165.27	161.83	2.58	39.09
133.84	160.35	158.77	161.75	165.66	162.04	2.70	39.80
136.00	160.49	158.84	161.91	166.01	162.23	2.81	40.44
136.28	160.50	158.85	161.93	166.06	162.26	2.83	40.52
138.78	160.66	158.93	162.12	166.46	162.46	2.96	41.27
141.00	160.80	159.00	162.28	166.82	162.67	3.07	41.93
141.35	160.82	159.01	162.30	166.88	162.70	3.09	42.03
143.99	160.98	159.10	162.49	167.29	162.93	3.22	42.82
145.99	161.10	159.17	162.64	167.60	163.10	3.31	43.41
146.70	161.14	159.19	162.69	167.71	163.16	3.35	43.62

149.48	161.31	159.29	162.88	168.13	163.40	3.48	44.45
150.99	161.39	159.34	162.99	168.36	163.52	3.55	44.90
152.33	161.47	159.38	163.08	168.55	163.63	3.61	45.30
155.25	161.64	159.47	163.28	169.02	163.88	3.76	46.17
155.99	161.68	159.49	163.33	169.13	163.95	3.79	46.39
158.26	161.80	159.56	163.49	169.49	164.14	3.91	47.06
161.00	161.95	159.64	163.67	169.92	164.36	4.05	47.87
161.33	161.97	159.65	163.70	169.97	164.39	4.07	47.97
164.49	162.14	159.73	163.90	170.47	164.65	4.23	48.91
165.99	162.22	159.77	164.00	170.70	164.77	4.31	49.36
167.73	162.31	159.81	164.10	170.96	164.90	4.40	49.88
171.00	162.47	159.88	164.31	171.45	165.15	4.57	50.85
171.06	162.48	159.88	164.31	171.46	165.16	4.57	50.87
174.46	162.65	159.95	164.52	172.00	165.43	4.76	51.88
175.99	162.72	159.98	164.61	172.25	165.55	4.84	52.33
177.95	162.82	160.02	164.73	172.56	165.70	4.96	52.92
180.99	162.97	160.07	164.92	173.08	165.95	5.14	53.82
181.53	162.99	160.07	164.95	173.18	165.99	5.18	53.98
185.19	163.16	160.13	165.17	173.81	166.29	5.41	55.07
185.99	163.20	160.14	165.22	173.94	166.35	5.46	55.31
188.95	163.34	160.18	165.40	174.44	166.59	5.65	56.19
190.99	163.43	160.20	165.52	174.78	166.75	5.77	56.79
192.80	163.51	160.17	165.62	175.12	166.88	5.92	57.33
195.99	163.66	160.06	165.77	175.72	167.09	6.20	58.28
196.74	163.69	160.03	165.81	175.86	167.14	6.26	58.50
200.78	163.87	159.84	166.08	176.78	167.47	6.70	59.70
201.00	163.88	159.83	166.10	176.84	167.49	6.73	59.77
204.93	164.04	159.93	166.56	177.50	167.90	6.94	60.94
206.00	164.09	159.93	166.65	177.65	167.99	6.99	61.26
209.21	164.22	159.76	166.54	177.69	167.91	7.08	62.21
211.00	164.30	159.53	166.19	177.43	167.62	7.07	62.74
213.65	164.41	159.11	165.65	177.07	167.17	7.11	63.53
216.00	164.50	158.82	165.69	177.25	167.15	7.28	64.23
216.78	164.53	158.76	165.90	177.50	167.29	7.40	64.46
218.44	164.60	158.69	166.73	178.44	167.88	7.76	64.96
219.49	164.64	158.68	167.55	179.33	168.46	8.09	65.27
220.23	164.67	158.69	166.24	180.05	168.95	8.36	65.49
220.78	164.69	159.04	168.78	180.63	169.44	8.45	65.65
221.00	164.70	159.24	168.99	180.85	169.65	8.46	65.72
221.22	164.71	159.44	166.20	181.08	169.86	8.47	65.78
221.57	164.72	159.75	169.52	181.43	170.19	8.48	65.89
221.86	164.73	159.98	169.77	181.70	170.44	8.50	65.97
221.88	164.73	160.00	169.79	181.72	170.46	8.50	65.98
223.01	164.78	163.32	173.16	185.18	173.84	8.56	66.32
225.82	164.89	171.56	181.54	193.70	182.22	3.66	
228.00	164.97	179.33	189.49	201.77	190.15	8.78	
229.00	165.01	182.92	193.15	205.47	193.80	8.02	
230.00	165.05	186.52	196.80	209.17	197.45	8.86	
231.00	165.08	189.62	199.35	211.76	200.00	8.90	
232.00	165.12	190.68	201.04	213.50	201.70	8.93	
233.00	165.16	192.15	202.54	215.06	203.20	8.96	

RUN NO. 31

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN ELEVATION AT SITE: 0 FT

TERRAIN DELTA h: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

OBST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 301 N-UNITS

CLIMATE: CONTINENTAL ALL YEAR (0)

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.66	135.69	135.63	135.78	135.93	135.78	0.12	1.68
9.99	138.51	138.48	138.63	138.79	138.63	0.12	2.79
15.23	141.98	142.02	142.17	142.32	142.17	0.12	4.53
18.74	143.61	143.69	143.83	143.99	143.84	0.12	5.57
24.10	145.67	145.80	145.95	146.10	145.95	0.12	7.17
30.72	147.69	147.90	148.05	148.20	148.05	0.12	9.14
35.98	149.03	149.30	149.45	149.60	149.45	0.12	10.70
40.99	150.14	150.47	150.62	150.77	150.62	0.12	12.19
45.86	151.10	151.49	151.64	151.79	151.64	0.12	13.64
50.68	151.96	152.40	152.55	152.71	152.55	0.12	15.07
55.95	152.81	153.32	153.47	153.62	153.47	0.12	16.64
60.40	153.48	154.05	154.20	154.36	154.20	0.12	17.99
65.77	154.20	154.84	154.99	155.15	154.99	0.12	19.56
70.91	154.84	155.54	155.70	155.85	155.70	0.12	21.06
75.92	155.44	156.21	156.37	156.53	156.37	0.12	22.58
80.77	155.97	156.81	156.97	157.14	156.97	0.13	24.02
85.87	156.50	157.40	157.58	157.74	157.57	0.14	25.50
90.66	156.96	157.92	158.12	158.30	158.11	0.15	26.96
95.97	157.47	158.45	158.69	158.88	158.68	0.17	28.54
100.33	157.88	158.67	159.17	159.65	159.16	0.38	29.92
105.02	158.30	158.76	159.66	160.60	159.67	0.72	31.41
110.99	158.73	158.81	160.16	161.59	160.19	1.08	33.00
115.81	159.09	158.74	160.56	162.45	160.58	1.45	34.44
120.97	159.47	158.46	160.95	163.38	160.93	1.90	35.97
125.91	159.82	158.25	161.32	164.23	161.27	2.34	37.44
130.90	160.16	158.33	161.88	165.23	161.82	2.70	38.92
135.76	160.47	158.73	162.66	166.40	162.60	3.00	40.37
140.89	160.79	159.13	163.45	167.58	163.39	3.30	41.89
145.90	161.10	159.53	164.19	168.68	164.14	3.58	43.38
150.93	161.39	159.92	164.93	169.78	164.88	3.85	44.88
155.82	161.67	160.30	165.63	170.83	165.59	4.11	46.34
160.71	161.93	160.68	166.33	171.89	166.30	4.38	47.79
165.80	162.20	161.07	167.05	173.00	167.04	4.66	49.30
170.95	162.47	161.46	167.79	174.13	167.79	4.95	50.83
175.86	162.72	161.83	168.48	175.20	168.50	5.22	52.29
180.94	162.96	162.21	169.20	176.37	169.25	5.53	53.81
185.79	163.19	162.56	169.88	177.52	169.98	5.84	55.25
190.62	163.42	162.90	170.55	178.67	170.70	6.16	56.68
195.62	163.64	163.13	171.25	179.97	171.43	6.58	58.17
200.81	163.87	163.37	171.96	181.31	172.20	7.01	59.71
205.93	164.09	163.84	172.67	182.13	172.87	7.15	61.29
210.57	164.28	164.25	173.30	182.88	173.47	7.28	62.61
210.99	164.30	164.29	173.36	182.95	173.52	7.29	62.74
213.5	164.40	164.53	173.71	183.37	173.86	7.36	63.51
215.20	164.47	164.67	173.93	183.63	174.07	7.41	63.99
216.00	164.50	164.74	174.04	183.76	174.17	7.43	64.23
216.22	164.51	164.76	174.07	183.80	174.20	7.44	64.30
216.93	164.54	164.83	174.17	183.92	174.30	7.46	64.51
217.47	164.56	164.87	174.25	184.01	174.37	7.47	64.67
217.89	164.58	164.91	174.31	184.08	174.43	7.49	64.79
218.23	164.59	164.94	174.36	184.14	174.47	7.50	64.89

218.51	164.60	164.97	174.41	184.21	174.52	7.52	64.98
218.52	164.60	164.97	174.42	184.22	174.53	7.52	64.98
219.63	164.64	165.07	174.59	184.43	174.69	7.56	65.31
221.00	164.70	168.38	177.95	187.82	178.04	7.59	65.72
222.36	164.75	172.50	182.13	192.03	182.21	7.63	
225.00	164.85	182.33	192.06	202.03	192.13	7.70	
226.00	164.89	188.05	195.92	205.81	195.89	7.72	
227.00	164.93	189.76	199.58	209.59	199.64	7.75	
228.00	164.97	193.12	202.97	213.01	203.03	7.77	
229.00	165.01	194.70	204.60	214.66	204.65	7.80	
230.00	165.05	196.11	206.04	216.13	206.09	7.82	

RUN NO. 32

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

FACTORY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBS FACLE DISTANCE: DETERMINED AT 3.9 NMI

OBSTACLE: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 360 N-UNITS

CLIMATE: EQUATORIAL (1)

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.62	135.66	135.60	135.75	135.91	135.75	0.12	1.67
9.45	138.56	138.53	138.68	138.83	138.68	0.12	2.81
15.09	141.91	141.95	142.10	142.25	142.10	0.12	4.49
18.72	143.60	143.68	143.83	143.98	143.83	0.12	5.57
24.39	145.76	145.91	146.06	146.21	146.06	0.12	7.25
30.67	147.68	147.85	148.04	148.20	148.05	0.12	9.12
35.93	149.02	149.30	149.45	149.60	149.45	0.12	10.65
40.90	150.12	150.46	150.61	150.77	150.61	0.12	12.16
45.96	151.12	151.52	151.67	151.83	151.68	0.12	13.67
50.67	151.95	152.42	152.57	152.73	152.57	0.12	15.07
55.80	152.78	153.32	153.47	153.62	153.47	0.12	16.59
60.47	153.47	154.07	154.22	154.38	154.23	0.12	17.98
65.91	154.22	154.88	155.04	155.20	155.05	0.12	19.60
70.81	154.84	155.60	155.74	155.90	155.75	0.12	21.05
75.85	155.43	156.27	156.42	156.57	156.42	0.12	22.56
80.77	155.97	156.87	157.02	157.18	157.02	0.12	24.02
85.81	156.50	157.47	157.63	157.79	157.63	0.12	25.52
90.65	156.97	158.03	158.19	158.35	158.19	0.12	26.96
95.99	157.47	158.62	158.78	158.94	158.76	0.15	28.54
100.59	157.87	158.81	159.27	159.77	159.28	0.38	29.91
105.56	158.29	158.95	159.80	160.73	159.82	0.75	31.39
110.95	158.72	159.16	160.37	161.76	160.42	1.01	32.99
115.79	159.09	159.40	160.90	162.69	160.99	1.29	34.43
120.89	159.47	159.66	161.47	163.69	161.60	1.58	35.95
125.90	159.82	159.91	162.01	164.64	162.18	1.85	37.44
130.99	160.16	160.14	162.51	165.54	162.72	2.11	38.95
135.75	160.47	160.37	162.95	166.31	163.19	2.33	40.37
140.75	160.78	160.60	163.39	167.09	163.67	2.55	41.85
145.99	161.10	160.81	163.83	167.88	164.15	2.77	43.41
150.85	161.39	161.01	164.22	168.60	164.58	2.98	44.86
155.96	161.67	161.20	164.63	169.34	165.03	3.19	46.38
160.76	161.94	161.37	165.00	170.03	165.44	3.40	47.80
165.65	162.20	161.55	165.37	170.73	165.85	3.61	49.26
170.73	162.46	161.72	165.75	171.48	166.28	3.83	50.77
175.98	162.72	161.84	166.13	172.25	166.70	4.03	52.33
180.84	162.96	161.96	166.47	172.95	167.08	4.24	53.77
185.86	163.20	162.07	166.82	173.76	167.50	4.59	55.27
190.92	163.43	162.20	167.17	174.57	167.93	4.87	56.77
195.65	163.64	162.49	167.78	175.64	168.58	5.17	58.18
200.53	163.86	162.67	168.39	176.83	169.24	5.57	59.63
205.57	164.07	162.79	168.97	178.09	169.89	6.02	61.13
210.78	164.29	163.30	169.64	178.89	170.55	6.13	62.68
215.93	164.50	163.80	170.34	179.71	171.25	6.25	64.21
220.93	164.70	164.26	170.95	180.42	171.82	6.35	65.70
221.84	164.73	164.35	171.05	180.55	171.92	6.36	65.97
225.28	164.87	164.66	171.48	181.08	172.35	6.45	66.99
226.00	164.89	164.74	171.59	181.22	172.46	6.47	67.20
227.10	164.94	164.85	171.76	181.42	172.62	6.50	67.53
228.26	164.98	164.96	171.93	181.62	172.78	6.54	67.67
229.06	165.01	165.04	172.04	181.76	172.89	6.56	68.11
229.67	165.03	165.10	172.13	181.86	172.97	6.58	68.29

230.14	165.05	165.14	172.19	181.94	173.04	6.59	68.43
230.52	165.06	165.18	172.25	182.01	173.09	6.60	68.55
230.83	165.08	165.32	172.40	182.17	173.24	6.61	68.64
230.89	165.08	165.36	172.44	182.22	173.28	6.62	68.66
231.00	165.08	165.66	172.75	182.54	173.59	6.62	68.69
232.09	165.12	168.64	175.79	185.62	176.63	6.66	69.02
235.13	165.24	177.01	184.25	194.15	185.08	6.73	
238.00	165.34	184.12	191.60	201.69	192.41	6.89	
239.00	165.38	186.36	193.99	204.10	194.78	6.98	
240.00	165.41	188.22	195.96	206.22	196.74	7.06	
241.00	165.45	189.83	197.65	207.99	198.44	7.12	
242.00	165.49	191.26	199.14	209.55	199.93	7.17	
243.00	165.52	192.43	200.48	210.95	201.23	7.26	



RUN NO. 33

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN ELEVATION AT SITE: 0 FT

TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

OBST HT: DETERMINED AT 4 FT ABOVE MSL

CLIMATE: CONTINENTAL SUBTROPICAL (2)

MINIMUM MONTHLY MEAN: 320 N-UNITS

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.69	147.90	148.05	148.20	148.05	0.12	9.13
35.99	149.03	149.30	149.45	149.61	149.45	0.12	10.70
40.97	150.13	150.46	150.61	150.77	150.62	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.06	152.40	152.56	152.71	152.56	0.12	15.07
55.91	152.80	153.32	153.47	153.62	153.47	0.12	16.63
60.48	153.48	154.05	154.20	154.36	154.20	0.12	17.92
65.79	154.20	154.84	155.00	155.16	155.00	0.12	19.56
70.81	154.84	155.54	155.70	155.86	155.70	0.12	21.06
75.91	155.44	156.20	156.37	156.54	156.37	0.12	22.57
80.77	155.97	156.80	156.98	157.16	156.98	0.12	24.02
85.85	156.50	157.38	157.58	157.77	157.58	0.12	25.53
90.67	156.97	157.89	158.12	158.34	158.12	0.12	26.96
95.97	157.47	158.41	158.69	158.95	158.69	0.21	28.54
100.63	157.88	158.63	158.63	159.17	159.17	0.42	29.92
105.60	158.29	158.71	159.66	160.66	159.67	0.76	31.40
110.99	158.73	158.73	160.16	161.66	160.19	1.15	33.00
115.81	159.09	158.57	160.56	162.64	160.59	1.59	34.44
120.94	159.47	158.15	160.94	163.76	160.95	2.19	35.96
125.90	159.82	158.05	161.61	165.08	161.58	2.75	37.44
130.93	160.16	158.47	162.63	166.64	162.58	3.19	38.93
135.75	160.47	158.87	163.49	167.94	163.43	3.54	40.37
140.84	160.79	159.28	164.40	169.30	164.33	3.92	41.88
145.91	161.10	159.68	165.22	170.53	165.15	4.24	43.39
150.90	161.39	160.08	166.06	171.75	165.97	4.56	44.87
155.88	161.67	160.48	166.88	172.93	166.77	4.87	46.35
160.71	161.93	160.85	167.64	174.04	167.52	5.15	47.79
165.73	162.20	161.25	168.51	175.30	168.36	5.49	49.28
170.97	162.47	161.64	169.31	176.52	169.17	5.81	50.84
175.86	162.72	162.03	170.18	177.77	170.01	6.15	52.30
180.88	162.96	162.41	170.97	178.97	170.79	6.47	53.79
185.90	163.20	162.79	171.85	180.30	171.66	6.84	55.28
190.66	163.42	163.14	172.63	181.49	172.44	7.17	56.70
195.58	163.64	163.43	173.45	182.87	173.26	7.60	58.16
200.67	163.86	163.66	174.26	184.39	174.11	8.10	59.67
205.95	164.09	164.11	175.10	185.47	174.91	8.34	61.24
210.90	164.29	164.55	175.90	186.42	175.64	8.54	62.71
213.64	164.40	164.79	176.29	186.89	176.01	8.64	63.53
215.96	164.50	164.99	176.70	187.36	176.37	8.74	64.22
216.77	164.53	165.07	176.85	187.53	176.51	8.78	64.46
218.44	164.60	165.22	177.13	187.87	176.76	8.85	64.96
219.49	164.64	165.31	177.31	188.07	176.92	8.90	65.27
220.23	164.67	165.37	177.43	188.22	177.03	8.93	65.49
220.78	164.69	165.42	177.52	188.32	177.12	8.95	65.65
221.00	164.70	165.44	177.55	188.37	177.15	8.96	65.72
221.22	164.71	165.46	177.59	188.41	177.19	8.97	65.78

221.57	164.72	165.49	177.65	188.48	177.24	6.99	65.89
221.86	164.73	165.52	177.71	188.55	177.29	9.00	65.97
221.88	164.73	165.52	177.71	188.56	177.29	9.01	65.98
223.01	164.78	165.62	177.92	189.82	177.48	9.07	66.32
225.82	164.89	169.90	162.36	193.33	181.89	9.16	
228.00	164.97	177.69	190.35	201.36	189.83	9.25	
229.00	165.01	181.28	194.01	205.05	193.49	9.29	
230.00	165.05	184.87	197.68	208.74	197.11	9.33	
231.00	165.08	187.37	200.24	211.33	199.69	9.37	
232.00	165.12	189.01	201.95	213.07	201.38	9.41	
233.00	165.16	190.47	203.46	214.62	202.89	9.44	

RUN NO. 34

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: MARITIME SUBTROPICAL (3)

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST. HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 370 N-UNITS

SURFACE TYPE: POOR GROUND

DIST (NMI)	FREE SPACE	ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)				EXPECTED VALUE	STD DEV	FIT DIST (NMI)
		10%	50%	90%	95%			
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30	
5.61	135.66	135.60	135.75	135.90	135.75	0.12	1.67	
9.47	138.57	138.54	138.69	138.85	138.69	0.12	2.82	
15.06	141.90	141.93	142.08	142.23	142.08	0.12	4.48	
19.71	143.60	143.68	143.83	143.98	143.83	0.12	5.56	
24.47	145.79	145.94	146.08	146.24	146.09	0.12	7.24	
30.66	147.67	147.89	148.04	148.20	148.04	0.12	9.12	
35.91	149.01	149.29	149.44	149.60	149.44	0.12	10.68	
40.87	150.11	150.46	150.61	150.76	150.61	0.12	12.15	
45.99	151.12	151.53	151.68	151.83	151.68	0.12	13.68	
50.87	151.95	152.42	152.57	152.72	152.57	0.12	15.07	
55.77	152.78	153.31	153.46	153.61	153.46	0.12	16.58	
60.46	153.47	154.00	154.21	154.37	154.22	0.12	17.98	
65.95	154.22	154.88	155.04	155.19	155.04	0.12	19.61	
70.81	154.94	155.56	155.72	155.88	155.72	0.12	21.06	
75.84	155.43	156.22	156.38	156.54	156.39	0.13	22.55	
80.78	155.97	156.82	156.99	157.16	156.99	0.13	24.02	
85.79	156.50	157.40	157.58	157.76	157.58	0.14	25.51	
90.65	156.97	157.93	158.13	158.33	158.13	0.15	26.96	
95.99	157.47	158.47	158.70	158.93	158.70	0.16	28.54	
100.58	157.87	158.65	159.17	159.72	159.18	0.42	29.91	
105.55	158.29	158.75	159.66	160.64	159.68	0.74	31.39	
110.94	158.72	158.83	160.14	161.61	160.19	1.08	32.99	
115.79	159.09	158.83	160.54	162.47	160.61	1.42	34.43	
120.88	159.46	158.68	160.89	163.40	160.98	1.84	35.94	
125.90	159.82	158.47	161.23	164.28	161.32	2.27	37.44	
130.97	160.16	158.37	161.59	165.13	161.69	2.64	38.95	
135.76	160.47	158.65	162.19	166.12	162.31	2.92	40.37	
140.73	160.79	159.02	162.82	167.13	162.98	3.17	41.75	
145.17	161.10	159.44	163.63	168.32	163.78	3.47	43.41	
150.86	161.39	159.82	164.29	169.32	164.47	3.71	44.86	
155.92	161.67	160.19	164.90	170.27	165.10	3.94	46.37	
160.79	161.94	160.56	165.55	171.24	165.77	4.18	47.81	
165.64	162.20	160.93	166.25	172.25	166.46	4.43	49.25	
170.68	162.46	161.29	166.84	173.20	167.09	4.66	50.75	
175.93	162.72	161.67	167.48	174.22	167.77	4.91	52.32	
180.85	162.96	162.04	168.19	175.30	168.49	5.18	53.78	
185.83	163.19	162.39	168.78	176.30	169.13	5.44	55.26	
190.93	163.43	162.74	169.42	177.41	169.83	5.74	56.79	
195.72	163.64	163.09	170.12	178.52	170.55	6.04	58.20	
200.54	163.86	163.30	170.63	179.60	171.16	6.36	59.63	
205.51	164.07	163.48	171.37	180.91	171.89	6.62	61.11	
210.65	164.28	163.90	172.10	181.84	172.58	7.02	62.64	
215.97	164.50	164.35	172.89	182.54	173.16	7.11	64.22	
220.89	164.69	164.81	173.45	183.44	173.96	7.28	65.69	
224.37	164.83	165.11	173.90	183.96	174.30	7.57	66.72	
225.97	164.89	165.24	174.06	184.18	174.47	7.40	67.19	
227.90	164.97	165.41	174.28	184.41	174.60	7.44	67.77	
229.78	165.04	165.57	174.54	184.71	174.91	7.41	68.31	
230.96	165.08	165.68	174.70	184.93	175.12	7.54	68.60	
231.08	165.08	165.62	174.70	184.93	175.12	7.55	68.69	
231.79	165.11	165.76	174.90	185.15	175.25	7.53	68.93	

232.41	165.14	165.82	175.00	185.27	175.34	7.60	69.11
232.89	165.15	165.86	175.08	185.36	175.41	7.62	69.25
233.29	165.17	165.90	175.14	185.43	175.47	7.63	69.37
233.61	165.18	165.97	175.19	185.49	175.51	7.63	69.47
233.88	165.18	166.03	175.20	185.50	175.52	7.65	69.49
234.90	165.23	166.05	175.41	185.76	175.72	7.70	69.85
235.99	165.27	167.26	176.66	187.04	176.96	7.73	70.18
238.01	165.34	172.33	182.01	192.53	182.27	7.89	
241.00	165.45	177.88	187.98	198.75	188.19	8.16	
242.00	165.49	179.86	190.23	201.10	190.39	8.30	
243.00	165.52	181.56	192.09	203.06	192.23	8.40	
244.00	165.56	183.08	193.70	204.75	193.84	8.47	
245.00	165.59	184.30	195.11	206.25	195.21	8.57	
246.00	165.63	185.34	196.37	207.60	196.43	8.70	

RUN NO. 35

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN ELEVATION AT SITE: 0 FT

TERRAIN DELTA h: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

OBST HT: DETERMINED AT 4 FT ABOVE MSL

CLIMATE: DESERT (4)

MINIMUM MONTHLY MEAN: 26°C UNITS

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	PREF SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.77	138.62	0.12	2.75
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.54
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.58
24.05	145.65	145.78	145.93	146.08	145.93	0.12	7.15
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.14
35.94	149.02	149.29	149.44	149.60	149.44	0.12	10.69
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.19
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.63
50.69	151.96	152.41	152.57	152.72	152.57	0.12	15.07
55.98	152.81	153.34	153.49	153.65	153.49	0.12	16.65
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.99
65.74	154.20	154.86	155.01	155.17	155.01	0.12	19.55
70.82	154.84	155.57	155.72	155.89	155.73	0.13	21.06
75.93	155.44	156.24	156.40	156.58	156.41	0.13	22.58
80.77	155.97	156.84	157.01	157.19	157.02	0.14	24.02
85.87	156.50	157.44	157.63	157.83	157.63	0.15	25.54
90.69	156.96	157.96	158.18	158.41	158.18	0.17	26.97
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.54
100.64	157.88	158.74	159.27	159.82	159.27	0.42	29.93
105.64	158.30	158.84	159.80	160.82	159.82	0.77	31.41
110.97	158.72	158.92	160.36	161.94	160.40	1.19	33.00
115.82	159.09	158.85	160.89	163.10	160.94	1.11	34.44
121.00	159.47	158.53	161.44	164.50	161.49	2.33	35.98
125.92	159.82	158.25	161.92	165.66	161.94	2.90	37.44
130.87	160.15	158.47	162.71	167.04	162.74	3.35	38.92
135.77	160.47	158.89	163.69	168.52	163.70	3.76	40.37
140.94	160.30	159.30	164.60	169.92	164.61	4.15	41.91
145.89	161.10	159.71	165.50	171.24	165.49	4.50	43.38
150.97	161.39	160.12	166.39	172.53	166.35	4.85	44.89
155.79	161.66	160.51	167.23	173.80	167.18	5.19	46.33
160.73	161.94	160.90	168.10	175.10	168.04	5.54	47.79
165.87	162.21	161.31	168.96	176.38	168.89	5.89	49.32
170.90	162.47	161.70	169.87	177.68	169.76	6.24	50.82
175.83	162.72	162.09	170.65	178.92	170.96	6.56	52.30
180.96	162.96	162.46	171.58	180.37	171.48	6.99	53.81
185.71	163.19	162.84	172.35	181.60	172.27	7.33	55.22
190.62	163.42	163.17	173.17	182.92	173.09	7.71	56.68
195.70	163.64	163.44	174.02	184.44	173.97	8.20	58.20
201.00	163.88	163.79	174.11	185.71	174.76	8.56	59.77
205.92	164.09	164.24	175.64	186.70	175.53	8.77	61.23
207.63	164.15	164.39	175.52	187.03	175.79	8.84	61.74
210.56	164.28	164.65	176.37	187.61	176.22	8.97	62.61
211.98	164.30	164.69	176.44	187.69	176.28	8.99	62.74
212.12	164.34	164.79	176.61	187.92	176.45	9.03	63.08
213.10	164.38	164.88	176.76	188.11	176.59	9.08	63.37
213.89	164.41	164.94	176.86	188.24	176.69	9.10	63.57
214.32	164.43	164.98	176.94	188.35	176.77	9.13	63.79
214.72	164.45	165.02	177.00	188.43	176.83	9.11	63.85
215.05	164.46	165.05	177.06	188.50	176.88	9.16	63.95
215.32	164.47	165.08	177.16	188.65	176.97	9.21	64.03

215.32	164.47	165.08	177.16	188.65	176.97	9.21	64.00
216.00	164.50	165.14	177.25	188.76	177.06	9.23	64.23
216.41	164.52	165.17	177.31	188.83	177.12	9.24	64.35
219.06	164.62	171.44	183.70	195.31	183.50	9.32	
222.00	164.74	182.63	195.08	206.78	194.84	9.44	
223.00	164.78	186.44	198.96	210.68	198.71	9.47	
224.00	164.82	190.26	202.83	214.58	202.57	9.50	
225.00	164.85	194.07	206.71	218.48	206.44	9.54	
226.00	164.89	196.18	208.88	220.68	208.60	9.57	
227.00	164.93	197.57	210.32	222.17	210.04	9.61	

RUN NO. 36

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA h: 30 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 320 N UNITS

CLIMATE: CONTINENTAL TEMPERATURE: (6)

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DR)

DIST (NMI)	FREE SPACE	10%	30%	50%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.59	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.69	147.90	148.05	148.20	148.05	0.12	9.13
35.99	149.03	149.30	149.45	149.60	149.45	0.12	10.70
40.97	150.13	150.46	150.61	150.77	150.62	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.96	152.40	152.55	152.71	152.56	0.12	15.07
55.91	152.80	153.31	153.47	153.62	153.47	0.12	16.63
60.48	153.48	154.04	154.20	154.36	154.20	0.12	17.99
65.79	154.20	154.83	155.00	155.16	155.00	0.13	19.56
70.81	154.84	155.53	155.70	155.86	155.70	0.13	21.06
75.91	155.44	156.19	156.37	156.54	156.37	0.14	22.57
80.77	155.97	156.77	156.97	157.16	156.97	0.15	24.02
85.85	156.50	157.35	157.58	157.77	157.57	0.17	25.53
90.67	156.97	157.85	158.12	158.34	158.10	0.19	26.96
95.97	157.47	158.35	158.69	158.95	158.67	0.23	28.54
100.63	157.88	158.57	158.17	159.70	159.15	0.44	29.92
105.60	158.29	158.64	159.65	160.65	159.65	0.79	31.40
110.99	158.73	158.64	160.15	161.67	160.15	1.18	33.00
115.81	159.09	158.38	160.54	162.62	160.51	1.66	34.44
120.64	159.47	157.80	160.32	163.72	160.82	2.32	35.96
125.90	159.82	158.10	162.00	165.46	161.86	2.87	37.44
130.93	160.16	158.53	163.11	167.39	162.92	3.35	38.93
135.75	160.47	158.93	163.38	168.38	163.78	3.70	40.37
140.84	160.79	159.32	164.76	169.59	164.57	4.02	41.88
145.91	161.10	159.73	165.62	170.86	165.42	4.35	43.39
150.90	161.39	160.12	166.39	172.00	166.16	4.64	44.87
155.88	161.67	160.49	167.06	173.03	166.77	4.90	46.35
160.71	161.93	160.87	167.84	174.14	167.63	5.19	47.79
165.73	162.20	161.25	168.58	175.24	168.37	5.47	49.28
170.97	162.47	161.64	169.25	176.31	169.08	5.73	50.84
175.86	162.72	162.01	170.01	177.44	169.83	6.03	52.30
180.88	162.96	162.38	170.74	178.57	170.57	6.33	53.79
185.90	163.20	162.74	171.37	179.66	171.26	6.61	55.28
190.66	163.42	163.09	172.07	180.78	171.98	6.91	56.70
195.58	163.64	163.36	172.76	182.00	172.71	7.28	58.16
200.67	163.86	163.56	173.35	183.28	173.39	7.70	59.67
205.95	164.09	163.99	174.01	184.14	174.05	7.87	61.24
210.95	164.29	164.42	174.71	184.99	174.71	8.03	62.71
213.54	164.40	164.66	175.05	185.41	175.04	8.10	63.53
215.96	164.50	164.86	175.32	185.75	175.31	8.16	64.22
218.77	164.53	164.93	175.41	185.86	175.40	8.18	64.46
218.44	164.60	165.07	175.60	186.10	175.59	8.22	64.96
219.49	164.64	165.16	175.71	186.25	175.70	8.24	65.27
220.23	164.67	165.22	175.79	186.35	175.79	8.25	65.49
220.78	164.69	165.26	175.86	186.43	175.85	8.27	65.65
221.00	164.70	165.28	175.89	186.46	175.87	8.27	65.72
221.22	164.71	165.30	175.90	186.49	175.90	8.28	65.78

221.57	164.72	165.33	175.95	186.55	175.94	8.29	65.89
221.86	164.73	165.36	175.99	186.60	175.98	8.30	65.97
221.88	164.73	165.36	175.99	186.61	175.99	8.30	65.98
223.01	164.78	165.46	176.21	186.87	176.18	8.36	66.32
225.82	164.89	171.49	182.39	193.12	182.34	0.45	
228.00	164.97	9.39	190.38	201.16	190.31	8.51	
229.00	165.01	3.02	194.04	204.85	193.97	8.53	
230.00	165.05	186.65	197.71	208.54	197.64	8.55	
231.00	165.08	189.18	200.27	211.13	200.20	8.57	
232.00	165.12	190.85	201.98	212.86	201.90	8.59	
233.00	165.16	192.35	203.49	214.39	203.42	8.61	



RUN NO. 37

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN DELTA H: 30 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS 4423 NMI

CLIMATE: MARITIME TEMPERATURE OVERLAND (7)

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 320 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	147.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.69	147.90	148.05	148.20	148.05	0.12	9.13
35.99	149.03	149.30	149.45	149.61	149.45	0.12	10.70
40.97	150.13	150.47	150.62	150.77	150.62	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.96	152.41	152.56	152.71	152.56	0.12	15.07
55.91	152.80	153.32	153.47	153.62	153.47	0.12	16.63
60.48	153.48	154.05	154.20	154.36	154.21	0.12	17.99
65.79	154.20	154.85	155.00	155.16	155.00	0.12	19.56
70.81	154.84	155.55	155.70	155.86	155.71	0.12	21.06
75.91	155.44	156.22	156.38	156.54	156.38	0.12	22.57
80.77	155.97	156.82	156.98	157.15	156.98	0.13	24.02
85.85	156.50	157.42	157.59	157.76	157.59	0.13	25.53
90.67	156.97	157.95	158.13	158.31	158.13	0.14	26.96
95.97	157.47	158.51	158.71	158.90	158.71	0.16	28.54
100.63	157.88	158.72	159.19	159.67	159.20	0.37	29.92
105.60	158.29	158.83	159.69	160.63	159.72	0.71	31.40
110.99	158.73	158.95	160.21	161.64	160.26	1.05	33.00
115.81	159.09	159.02	160.66	162.53	160.73	1.37	34.44
120.94	159.47	158.99	161.11	163.52	161.20	1.77	35.95
125.90	159.82	158.95	161.54	164.43	161.63	2.14	37.44
130.93	160.16	158.99	161.96	165.29	162.07	2.46	38.93
135.75	160.47	159.10	162.37	166.09	162.51	2.73	40.37
140.84	160.79	159.26	162.79	166.88	162.97	2.98	41.88
145.91	161.10	159.38	163.20	167.67	163.40	3.24	43.39
150.90	161.39	159.70	163.83	168.65	164.05	3.50	44.87
155.88	161.67	160.08	164.48	169.65	164.72	3.74	46.35
160.71	161.93	160.43	165.06	170.55	165.33	3.96	47.79
165.73	162.20	160.79	165.66	171.54	165.97	4.20	49.28
170.97	162.47	161.21	166.46	172.74	166.78	4.51	50.84
175.86	162.72	161.58	167.10	173.76	167.46	4.77	52.30
180.86	162.96	161.93	167.70	174.77	168.11	5.03	53.79
185.90	163.20	162.29	168.35	175.90	168.82	5.33	55.28
190.66	163.42	162.66	169.08	177.10	169.58	5.66	56.70
195.58	163.64	162.88	169.72	178.32	170.27	6.05	58.16
200.67	163.86	163.02	170.32	179.64	170.95	6.51	59.67
205.95	164.09	163.51	171.12	180.63	171.71	6.70	61.24
210.90	164.29	163.97	171.83	181.47	172.39	6.85	62.71
213.64	164.40	164.22	172.18	181.92	172.73	6.92	63.53
215.96	164.50	164.43	172.46	182.27	173.02	6.98	64.22
216.77	164.53	164.50	172.56	182.39	173.11	7.00	64.46
218.44	164.60	164.65	172.75	182.64	173.31	7.04	64.96
219.49	164.64	164.74	172.87	182.79	173.43	7.07	65.27
220.23	164.67	164.81	172.99	182.94	173.54	7.09	65.49
220.78	164.69	164.87	173.10	183.06	173.64	7.12	65.65
221.00	164.70	164.89	173.14	183.11	173.68	7.13	65.72
221.22	164.71	164.91	173.18	183.16	173.71	7.14	65.78

221.57	164.72	164.95	173.24	183.24	173.77	7.16	65.89
221.86	164.73	164.98	173.30	183.31	173.83	7.17	65.97
221.88	164.73	164.98	173.31	183.32	173.83	7.17	65.98
223.01	164.78	166.65	175.09	185.14	175.59	7.23	66.32
225.82	164.89	174.93	183.52	193.66	184.01	7.32	
228.00	164.97	182.84	191.53	201.73	192.00	7.38	
229.00	165.01	186.48	195.21	205.43	195.68	7.41	
230.00	165.05	190.12	198.89	209.13	199.35	7.43	
231.00	165.08	192.66	201.46	211.73	201.92	7.46	
232.00	165.12	194.35	203.18	213.49	203.64	7.49	
233.00	165.16	195.85	204.71	215.06	205.17	7.51	

RUN NO. 38

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 10 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.9 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: MARITIME TEMPERATE OVERSEA (8)

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 320 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.86	132.70	0.12	0.30
5.65	135.69	135.62	135.77	135.93	135.77	0.12	1.68
9.40	138.52	138.49	138.64	138.80	138.65	0.12	2.80
15.19	141.96	142.00	142.15	142.30	142.15	0.12	4.52
18.73	143.61	143.68	143.83	143.99	143.83	0.12	5.57
24.17	145.69	145.82	145.97	146.13	145.97	0.12	7.19
30.71	147.69	147.90	148.05	148.20	148.05	0.12	9.13
35.99	149.03	149.30	149.45	149.60	149.45	0.12	10.70
40.97	150.13	150.46	150.61	150.77	150.61	0.12	12.18
45.88	151.10	151.49	151.64	151.80	151.64	0.12	13.64
50.68	151.96	152.40	152.55	152.71	152.55	0.12	15.07
55.91	152.80	153.31	153.46	153.62	153.47	0.12	16.63
60.48	153.48	154.05	154.20	154.35	154.20	0.12	17.99
65.79	154.20	154.84	154.99	155.15	154.99	0.12	19.56
70.81	154.84	155.54	155.70	155.85	155.70	0.12	21.06
75.91	155.44	156.20	156.37	156.53	156.36	0.13	22.57
80.77	155.97	156.79	156.97	157.13	156.97	0.13	24.02
85.85	156.50	157.38	157.57	157.74	157.56	0.14	25.53
90.67	156.97	157.90	158.11	158.30	158.10	0.15	26.96
95.97	157.47	158.42	158.68	158.89	158.66	0.18	28.54
100.63	157.88	158.63	159.15	159.65	159.14	0.40	29.92
105.60	158.29	158.71	159.63	160.59	159.64	0.73	31.40
110.59	158.73	158.76	160.12	161.57	160.15	1.10	33.00
115.81	159.09	158.63	160.49	162.44	160.52	1.49	34.44
120.94	159.47	158.27	160.84	163.40	160.84	2.00	35.96
125.90	159.92	158.02	161.18	164.31	161.17	2.46	37.44
130.93	160.16	158.37	162.04	165.68	162.03	2.86	38.93
135.75	160.47	158.77	162.88	166.96	162.87	3.20	40.37
140.84	160.79	159.16	163.62	168.15	163.64	3.51	41.88
145.91	161.10	159.55	164.32	169.28	164.38	3.80	43.39
150.90	161.39	159.96	165.14	170.50	165.20	4.12	44.87
155.88	161.67	160.34	165.81	171.60	165.91	4.40	46.35
160.71	161.93	160.69	166.42	172.64	166.57	4.67	47.79
165.73	162.20	161.09	167.24	173.92	167.41	5.01	49.28
170.97	162.47	161.47	167.89	175.04	168.12	5.30	50.84
175.86	162.72	161.84	168.56	176.18	168.84	5.61	52.30
180.89	162.96	162.22	169.32	177.46	169.65	5.96	53.79
185.90	163.20	162.57	169.92	178.63	170.34	6.26	55.28
190.66	163.42	162.92	170.66	179.88	171.12	6.63	56.70
195.58	163.64	163.18	171.34	181.24	171.88	7.07	58.16
200.67	163.86	163.75	171.92	182.60	172.58	7.53	59.67
205.95	164.09	163.82	172.82	183.91	173.44	7.82	61.24
210.90	164.29	164.25	173.41	184.65	174.06	7.98	62.71
213.64	164.40	164.50	173.77	185.19	174.44	8.10	63.53
215.96	164.50	164.72	174.20	185.76	174.85	8.23	64.22
216.77	164.53	164.79	174.33	185.94	174.98	8.28	64.46
218.14	164.60	164.94	174.58	186.29	175.22	8.35	64.96
219.46	164.64	165.04	174.72	186.49	175.37	8.40	65.27
220.23	164.67	165.10	174.82	186.63	175.47	8.43	65.49
220.78	164.69	165.10	174.89	186.74	175.55	8.45	65.65
221.00	164.70	165.17	174.91	186.78	175.58	8.46	65.72
221.22	164.71	165.19	174.94	186.82	175.60	8.47	65.78

221.57	164.72	165.22	174.99	186.89	175.65	8.48	65.89
221.86	164.73	165.24	175.03	186.96	175.70	8.50	65.97
221.88	164.73	165.25	175.04	186.97	175.70	8.50	65.98
223.01	164.78	165.35	175.20	187.22	175.87	8.56	66.32
225.82	164.89	171.56	181.54	193.70	182.22	8.66	
228.00	164.97	179.33	189.49	201.77	190.15	8.78	
229.00	165.01	182.92	193.15	205.47	193.80	8.82	
230.00	165.05	186.52	196.80	209.17	197.45	8.86	
231.00	165.08	189.02	199.35	211.76	200.00	8.90	
232.00	165.12	190.68	201.04	213.50	201.70	8.93	
233.00	165.16	192.15	202.54	215.06	203.20	8.96	

## APPENDIX E

### COMPUTER PRINTOUTS OF BASIC TRANSMISSION LOSS FOR VARIOUS TERRAIN-LIMITED AND OBSTACLE-LIMITED HORIZONS

This appendix contains the Johnson-Gierhart program printouts of basic transmission loss for the obstacle runs of section 3.2 in volume 1. The run numbers are identified below.

Volume 2	Reference in Volume 1					Volume 2
Run No.	Table	Figure	Terrain $\Delta h$ (ft)	Lobing	Obstacle Height (ft)	Page
39	3-5, 3-6	3-21	0	Determines Median	0	E-3
40	3-5, 3-6	3-22	50	Determines Median	4	E-5
41	3-5, 3-6	3-23	50	Determines Median	25	E-7
42	3-5, 3-6	3-24	50	Determines Median	50	E-9
43	3-5, 3-6	3-25	0	Determines Median	0	E-11
44	3-5, 3-6	3-26	50	Determines Median	4	E-13
45	3-5, 3-6	3-27	50	Determines Median	25	E-15
46	3-5, 3-6	3-28	50	Determines Median	50	E-17
47	3-5, 3-6	3-29	0	Determines Median	0	E-19
48	3-5, 3-6	3-30	50	Determines Median	4	E-21
49	3-5, 3-6	3-31	50	Determines Median	25	E-23
50	3-5, 3-6	3-32	50	Determines Median	50	E-25
51	3-5, 3-6	3-33	0	Determines Median	0	E-27
52	3-5, 3-6	3-34	50	Determines Median	4	E-29
53	3-5, 3-6	3-35	50	Determines Median	25	E-31
54	3-5, 3-6	3-36	50	Determines Median	50	E-33
55	3-5, 3-6	3-37	0	Determines Median	0	E-35
56	3-5, 3-5	3-38	50	Determines Median	4	E-37
57	3-5, 3-6	3-39	0	Determines Median	0	E-39
58	3-5, 3-6	3-40	50	Determines Median	4	E-41
59	3-5, 3-6	3-41	50	Determines Median	25	E-43
60	3-5, 3-6	3-42	50	Determines Median	50	E-45
61	3-5, 3-6	3-43	0	Determines Median	0	E-47
62	3-5, 3-6	3-44	50	Determines Median	4	E-49
63	3-5, 3-6	3-45	50	Determines Median	25	E-51
64	3-5, 3-6	3-46	50	Determines Median	50	E-53
65	3-5, 3-6	3-47	150	Determines Median	19	E-55
66	3-5, 3-6	3-48	250	Determines Median	40	E-57
67	3-5, 3-6	3-49	0	Determines Median	0	E-59
68	3-5, 3-6	3-50	50	Determines Median	4	E-61
69	3-5, 3-6	3-51	50	Determines Median	25	E-63

Volume 2	Reference in Volume 1					Volume 2
Run No.	Table	Figure	Terrain $\Delta h$ (ft)	Lobing	Obstacle Height (ft)	Page
70	3-5, 3-6	3-52	50	Determines Median	50	E-65
71	3-5, 3-6	3-53	0	Determines Median	0	E-67
72	3-5, 3-6	3-54	50	Determines Median	4	E-69
73	3-5, 3-6	3-55	50	Determines Median	25	E-71
74	3-5, 3-6	3-56	50	Determines Median	50	E-73
75	3-7, 3-8	3-21	0	Contributes to Variability	0	E-75
76	3-7, 3-8	3-22	50	Contributes to Variability	4	E-76
77	3-7, 3-8	3-23	50	Contributes to Variability	25	E-77
78	3-7, 3-8	3-24	50	Contributes to Variability	50	E-78
79	3-7, 3-8	3-25	0	Contributes to Variability	0	E-79
80	3-7, 3-8	3-26	50	Contributes to Variability	4	E-81
81	3-7, 3-8	3-27	50	Contributes to Variability	25	E-83
82	3-7, 3-8	3-28	50	Contributes to Variability	50	E-84
83	3-7, 3-8	3-29	0	Contributes to Variability	0	E-85
84	3-7, 3-8	3-30	50	Contributes to Variability	4	E-86
85	3-7, 3-8	3-31	50	Contributes to Variability	25	E-87
86	3-7, 3-8	3-32	50	Contributes to Variability	50	E-88
87	3-7, 3-8	3-33	0	Contributes to Variability	0	E-89
88	3-7, 3-8	3-34	50	Contributes to Variability	4	E-91
89	3-7, 3-8	3-35	50	Contributes to Variability	25	E-93
90	3-7, 3-8	3-36	50	Contributes to Variability	50	E-95
91	3-7, 3-8	3-37	0	Contributes to Variability	0	E-96
92	3-7, 3-8	3-38	50	Contributes to Variability	4	E-98
93	3-7, 3-8	3-39	0	Contributes to Variability	0	E-100
94	3-7, 3-8	3-40	50	Contributes to Variability	4	E-102
95	3-7, 3-8	3-41	50	Contributes to Variability	25	E-103
96	3-7, 3-8	3-42	50	Contributes to Variability	50	E-104
97	3-7, 3-8	3-43	0	Contributes to Variability	0	E-106
98	3-7, 3-8	3-44	50	Contributes to Variability	4	E-108
99	3-7, 3-8	3-45	50	Contributes to Variability	25	E-110
100	3-7, 3-8	3-46	50	Contributes to Variability	50	E-111
101	3-7, 3-8	3-47	150	Contributes to Variability	19	E-113
102	3-7, 3-8	3-48	250	Contributes to Variability	40	E-115
103	3-7, 3-8	3-49	0	Contributes to Variability	0	E-117
104	3-7, 3-8	3-50	50	Contributes to Variability	4	E-119
105	3-7, 3-8	3-51	50	Contributes to Variability	25	E-120
106	3-7, 3-8	3-52	50	Contributes to Variability	50	E-122
107	3-7, 3-8	3-53	0	Contributes to Variability	0	E-124
108	3-7, 3-8	3-54	50	Contributes to Variability	4	E-126
109	3-7, 3-8	3-55	50	Contributes to Variability	25	E-128
110	3-7, 3-8	3-56	50	Contributes to Variability	50	E-130

RUN NO. 39

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI

TERRAIN ELEVATION: 0 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCLUDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	FIT DIST (NMI)
0.99	123.27	123.10	123.30	123.52	123.31	0.16	0.35
5.06	127.66	126.28	127.72	129.46	127.81	1.25	1.78
10.43	132.64	130.08	132.76	136.61	133.12	2.57	3.66
14.34	135.18	132.20	135.34	140.15	135.86	3.13	5.03
20.83	138.29	134.96	138.53	144.27	139.20	3.67	7.31
25.90	140.14	136.71	140.41	146.57	141.18	3.90	9.09
30.85	141.63	138.16	141.96	148.40	142.78	4.05	10.83
35.76	142.90	139.41	143.20	149.92	144.15	4.16	12.55
40.69	144.01	140.52	144.46	151.25	145.35	4.24	14.28
45.80	145.03	141.53	145.54	152.42	146.43	4.30	16.08
50.87	145.94	142.45	146.51	153.46	147.41	4.35	17.85
55.80	146.74	143.27	147.37	154.38	148.28	4.39	19.58
60.55	147.44	142.57	142.73	142.91	142.71	0.13	21.25
61.03	147.51	143.03	143.20	143.39	143.20	0.14	21.41
61.71	147.61	145.72	145.89	146.07	145.89	0.14	21.66
62.92	147.78	156.03	166.21	166.39	166.21	0.14	22.08
64.16	147.95	146.05	146.24	146.43	146.24	0.15	22.52
65.45	148.12	143.24	143.42	143.62	143.43	0.15	22.97
65.99	148.19	143.76	143.96	144.16	143.96	0.15	23.16
66.79	148.29	146.40	146.60	146.80	146.60	0.16	23.44
68.17	148.47	167.60	167.81	168.02	167.81	0.17	23.93
69.69	149.65	146.75	146.97	147.21	146.99	0.18	24.43
71.00	148.82	143.93	144.17	144.42	144.18	0.19	24.92
71.09	148.83	143.94	144.17	144.43	144.18	0.19	24.95
72.63	149.02	147.10	147.37	147.64	147.37	0.21	25.49
74.23	149.21	169.28	169.58	169.88	169.50	0.24	26.05
75.89	149.40	147.44	147.78	148.13	147.79	0.27	26.64
76.02	149.41	147.05	147.39	147.74	147.39	0.27	26.67
77.62	149.60	144.61	145.01	145.41	145.01	0.22	27.24
79.41	149.79	147.75	148.23	148.73	148.23	0.38	27.87
81.00	149.95	163.14	163.73	164.33	163.73	0.47	28.43
81.27	149.99	170.96	171.58	172.20	171.58	0.48	28.52
83.20	150.20	147.92	148.72	149.53	148.72	0.63	29.20
85.21	150.40	144.95	145.95	147.08	146.01	0.33	29.91
85.99	150.48	145.25	146.48	147.71	146.48	0.36	30.18
87.33	150.61	147.80	149.27	150.75	149.26	1.15	30.64
89.47	150.83	172.04	173.92	175.78	173.91	1.45	31.40
90.99	150.97	150.48	152.61	154.72	152.60	1.66	31.94
91.73	151.04	147.56	149.81	152.04	149.80	1.75	32.20
94.08	151.26	145.50	147.06	149.64	147.38	1.64	33.02
96.02	151.44	146.17	149.03	151.87	149.02	2.23	33.69
96.53	151.49	147.38	150.32	153.22	150.31	2.28	33.88
99.07	151.71	173.18	176.41	179.62	176.40	2.52	34.77
100.99	151.88	149.64	153.08	156.51	153.07	2.69	35.44
101.72	151.94	147.28	150.61	154.33	150.81	2.75	35.70
104.48	152.17	145.88	148.05	151.87	148.56	2.37	36.67
105.99	152.30	140.19	148.95	152.92	149.33	2.64	37.20
107.35	152.41	147.14	151.30	155.40	151.28	3.23	37.68
110.34	152.65	174.67	179.13	183.55	179.12	3.47	38.73
110.99	152.70	159.50	164.02	168.51	164.02	3.52	39.96
113.45	152.89	147.30	151.81	156.55	151.79	3.73	39.82
116.00	153.05	140.35	149.12	154.12	149.82	3.06	40.71

116.68	153.33	146.32	149.06	154.12	149.79	3.10	40.95
120.04	153.39	147.19	152.33	157.72	152.41	4.11	42.13
120.99	153.45	149.17	154.74	160.21	154.71	4.31	42.46
123.54	153.63	176.30	182.19	187.89	182.13	4.53	43.36
125.98	153.80	149.54	155.59	161.60	155.62	4.71	44.22
127.18	153.86	147.50	152.07	158.89	153.07	4.45	44.64
130.96	154.13	146.86	150.15	156.53	151.12	3.85	45.96
131.00	154.13	146.87	150.15	156.54	151.12	3.65	45.98
134.89	154.39	147.84	153.45	160.20	153.81	4.84	47.34
135.99	154.46	148.63	155.85	162.70	155.73	5.49	47.73
138.98	154.65	177.63	185.32	192.44	185.21	5.71	48.78
140.98	154.77	151.86	159.61	166.90	159.47	5.87	49.46
143.22	154.91	148.20	154.07	161.56	154.57	5.23	50.27
145.98	155.07	147.62	151.64	159.37	152.80	4.67	51.23
147.62	155.17	147.52	151.40	159.30	152.65	4.70	51.81
150.98	155.37	148.22	153.20	161.42	154.21	5.21	52.99
152.20	155.44	148.60	154.76	163.10	155.44	5.69	53.42
156.00	155.65	158.82	168.16	176.84	167.95	7.04	54.75
156.96	155.70	175.88	185.31	194.69	185.11	7.11	55.09
161.00	155.92	149.20	156.94	166.12	157.41	6.60	56.51
161.92	155.97	145.10	155.59	164.87	156.46	6.20	56.83
166.00	156.19	147.53	153.14	162.89	154.74	5.74	58.26
167.14	156.25	148.57	153.17	163.03	154.81	5.78	58.66
170.85	156.44	149.40	154.99	165.29	156.46	6.31	59.96
171.00	156.45	149.45	155.12	165.43	156.57	6.34	60.02
172.83	156.54	150.15	157.12	167.65	158.23	6.89	60.66
174.09	156.60	150.67	158.94	169.62	159.69	7.42	61.10
174.97	156.65	151.05	160.40	171.19	160.85	7.87	61.41
175.64	156.68	151.33	161.55	172.43	161.76	8.24	61.64
176.00	156.70	151.49	162.17	173.11	162.25	8.45	61.77
176.15	156.71	151.56	162.43	173.39	162.46	8.53	61.80
176.57	156.73	151.74	163.09	174.12	162.99	8.74	61.97
176.92	156.74	151.95	163.58	174.67	163.41	8.88	62.10
177.75	156.78	152.62	164.40	175.65	164.23	9.00	62.39
178.31	156.81	153.73	165.55	176.84	165.38	9.03	62.58
180.94	156.94	158.95	170.94	182.36	170.76	9.15	63.51
182.55	157.02	162.15	174.24	185.73	174.05	9.21	DIFR
185.00	157.13	169.50	181.72	193.31	181.53	9.30	DIFR
186.00	157.18	172.45	184.78	196.40	184.57	9.34	DIFR
187.00	157.22	175.46	187.83	199.49	187.61	9.39	DIFR
188.00	157.27	178.44	190.89	202.58	190.65	9.43	DIFR
189.00	157.32	181.42	193.94	205.67	193.69	9.47	DIFR
190.00	157.36	184.41	197.00	208.75	196.74	9.51	DIFR



RUN NO. 4 0

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 2,000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

OBST HT: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4425 NMI

MINIMUM MONTHLY MEAN: 28.0 N UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	123.27	123.15	123.30	123.46	123.30	0.12	0.35
5.05	127.66	127.57	127.72	127.89	127.72	0.12	1.78
10.43	132.64	132.61	132.76	132.91	132.76	0.12	3.66
14.34	135.18	135.19	135.34	135.49	135.34	0.12	5.03
20.83	138.29	138.36	138.51	138.66	138.51	0.12	7.31
25.90	140.14	140.26	140.41	140.57	140.42	0.12	9.09
30.85	141.63	141.81	141.96	142.12	141.96	0.12	10.83
35.76	142.90	143.14	143.29	143.44	143.29	0.12	12.55
40.69	144.01	144.31	144.46	144.61	144.46	0.12	14.28
45.80	145.03	145.39	145.54	145.69	145.54	0.12	16.08
50.87	145.94	146.35	146.51	146.67	146.51	0.12	17.85
55.80	146.74	147.21	147.37	147.54	147.37	0.13	19.58
60.55	147.44	147.97	148.14	148.32	148.15	0.13	21.25
61.00	147.51	148.04	148.21	148.39	148.22	0.14	21.41
61.71	147.61	148.15	148.32	148.50	148.33	0.14	21.66
62.92	147.78	148.33	148.51	148.69	148.51	0.14	22.08
64.16	147.95	148.51	148.70	148.89	148.70	0.15	22.52
65.45	148.12	148.70	148.89	149.09	148.89	0.15	22.97
65.99	148.19	148.78	148.87	148.97	148.97	0.15	23.16
66.79	148.29	148.89	149.08	149.29	149.09	0.16	23.44
68.17	148.47	149.07	149.28	149.50	149.29	0.17	23.93
69.60	148.65	149.26	149.49	149.72	149.49	0.18	24.43
71.00	148.82	149.44	149.68	149.93	149.68	0.19	24.92
71.09	148.83	149.45	149.69	149.94	149.70	0.19	24.95
72.63	149.02	149.64	149.91	150.18	149.91	0.21	25.49
74.23	149.21	149.83	150.12	150.43	150.13	0.24	26.05
75.89	149.40	150.01	150.35	150.70	150.35	0.27	26.64
76.00	149.41	150.02	150.36	150.72	150.37	0.27	26.67
77.62	149.60	150.16	150.58	150.99	150.58	0.30	27.24
79.41	149.79	150.34	150.82	151.32	150.82	0.38	27.87
81.00	149.96	150.44	151.04	151.64	151.04	0.47	29.43
81.27	149.99	150.46	151.07	151.69	151.07	0.48	28.52
83.20	150.20	150.59	151.34	152.14	151.34	0.63	29.20
85.21	150.40	150.59	151.62	152.71	151.64	0.83	29.91
85.99	150.49	150.66	151.73	152.96	151.78	0.90	30.18
87.30	150.61	150.77	151.91	153.37	152.01	1.02	30.64
89.47	150.83	150.93	152.20	154.06	152.38	1.23	31.40
90.99	150.97	151.02	152.39	154.51	152.62	1.37	31.94
91.73	151.04	151.06	152.48	154.71	152.73	1.44	32.20
94.08	151.26	151.18	152.75	155.32	153.06	1.64	33.02
96.00	151.44	151.27	152.96	155.79	153.32	1.79	33.69
96.53	151.49	151.30	153.01	155.91	153.38	1.83	33.88
99.07	151.71	151.40	153.27	156.49	153.69	2.01	34.77
100.99	151.88	151.49	153.45	156.90	153.92	2.14	35.44
101.72	151.94	151.51	153.53	157.05	154.00	2.19	35.70
104.48	152.17	151.62	153.79	157.61	154.31	2.37	36.67
105.99	152.30	151.68	153.93	157.90	154.47	2.46	37.20
107.35	152.41	151.74	154.06	158.16	154.61	2.54	37.66
110.34	152.65	151.85	154.32	158.74	154.93	2.73	38.73
110.99	152.70	151.88	154.38	158.87	155.00	2.77	38.96
113.45	152.89	151.98	154.59	159.33	155.25	2.91	39.82
116.00	153.08	152.09	154.80	159.80	155.51	3.06	40.71

116.68	153.13	152.11	154.85	159.92	155.58	3.10	40.95
120.04	153.38	152.25	155.13	160.52	155.91	3.28	42.13
120.99	153.45	152.29	155.21	160.69	156.01	3.34	42.46
123.54	153.63	152.39	155.42	161.13	156.20	3.47	43.36
125.99	153.80	152.49	155.61	161.53	156.49	3.59	44.22
	153.88	152.54	155.70	161.72	156.59	3.65	44.64
130.96	154.13	152.68	155.97	162.36	156.94	3.85	45.96
131.00	154.13	152.68	155.97	162.37	156.94	3.85	45.98
134.89	154.39	152.84	156.30	163.06	157.33	4.07	47.34
135.99	154.46	152.89	156.41	163.27	157.45	4.13	47.73
138.98	154.65	153.02	156.70	163.84	157.78	4.30	48.78
140.98	154.77	153.09	156.85	164.17	157.96	4.41	49.48
143.22	154.91	153.11	156.93	164.45	158.09	4.51	50.27
145.98	155.07	153.10	156.96	164.75	158.19	4.64	51.23
147.62	155.17	153.10	157.00	164.97	158.27	4.73	51.81
150.98	155.37	153.19	157.35	165.67	158.65	4.97	52.99
152.20	155.44	153.26	157.60	166.05	158.88	5.09	53.42
156.00	155.65	153.50	158.63	167.46	159.78	5.52	54.75
156.96	155.70	153.52	158.63	167.46	159.78	5.64	55.09
161.00	155.92	153.19	158.56	167.98	159.82	5.86	56.51
161.92	155.97	153.02	158.24	167.78	159.59	5.86	56.83
166.00	156.19	152.07	156.85	166.87	158.48	5.91	58.26
167.14	156.25	151.87	156.68	166.81	158.34	5.97	58.66
170.85	156.44	151.89	157.31	167.88	158.86	6.43	59.96
171.00	156.45	151.70	157.38	167.97	158.91	6.46	60.02
172.83	156.54	151.93	158.55	169.30	159.84	6.86	60.66
174.09	156.60	152.13	158.68	170.53	160.71	7.23	61.10
174.97	156.65	152.29	160.59	171.51	161.41	7.54	61.41
175.64	156.68	152.40	161.30	172.29	161.95	7.78	61.64
178.00	156.70	152.47	161.68	172.71	162.25	7.92	61.77
175.15	156.71	152.50	161.84	172.89	162.37	7.97	61.83
176.57	156.73	152.58	162.26	173.35	162.70	8.12	61.97
176.92	156.74	152.64	162.57	173.71	162.95	8.24	62.10
177.22	156.76	152.70	162.81	174.02	163.15	8.33	62.20
178.31	156.81	153.56	165.19	176.68	165.22	9.03	62.58
180.94	156.94	159.61	171.60	183.02	171.43	9.15	63.51
181.96	156.99	161.96	174.01	185.48	173.83	9.19	DIFR
184.00	157.08	168.15	180.32	191.87	180.10	9.27	DIFR
185.00	157.13	171.18	183.40	194.99	183.21	9.30	DIFR
186.00	157.18	174.21	186.49	198.12	186.29	9.34	DIFR
187.00	157.22	177.21	189.58	201.24	189.36	9.39	DIFR
188.00	157.27	180.22	192.67	204.36	192.44	9.43	DIFR
189.00	157.32	183.24	195.76	207.48	195.51	9.47	DIFR

RUN NO. 41

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NM:

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY EFFECTIVE EARTH RADIUS: 4423 NM

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST IT: SPECIFIED AT 25 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NM)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NM)
0.99	123.27	123.15	123.30	123.46	123.30	0.12	0.35
5.06	127.66	127.57	127.72	127.88	127.72	0.12	1.78
10.43	132.64	132.61	132.76	132.91	132.76	0.12	3.66
14.34	135.18	135.19	135.34	135.49	135.34	0.12	5.03
20.93	138.20	138.36	138.51	138.66	138.51	0.12	7.31
25.90	140.14	140.26	140.41	140.57	140.42	0.12	9.09
33.65	141.03	141.61	141.96	142.12	141.96	0.12	10.83
35.76	142.90	143.14	143.29	143.44	143.29	0.12	12.55
40.69	144.01	144.31	144.46	144.61	144.46	0.12	14.28
45.80	145.03	145.39	145.54	145.69	145.54	0.12	16.06
50.87	145.94	146.35	146.51	146.67	146.51	0.12	17.85
55.80	146.74	147.21	147.37	147.54	147.37	0.13	19.58
60.55	147.44	147.97	148.14	148.32	148.15	0.13	21.25
61.00	147.51	148.04	148.21	148.39	148.22	0.14	21.41
61.71	147.61	148.15	148.32	148.50	148.33	0.14	21.66
62.92	147.78	148.33	148.51	148.69	148.51	0.14	22.08
64.16	147.95	148.51	148.70	148.89	148.70	0.15	22.52
65.45	148.12	148.70	148.89	149.09	148.89	0.15	22.97
65.99	148.19	148.78	148.97	149.17	148.97	0.15	23.15
68.79	148.29	148.89	149.08	149.29	149.09	0.16	23.44
68.17	148.47	149.07	149.28	149.50	149.29	0.17	23.93
69.60	148.65	149.26	149.49	149.72	149.49	0.18	24.43
71.00	148.82	149.44	149.68	149.93	149.66	0.19	24.92
71.09	148.83	149.45	149.69	149.94	149.70	0.19	24.95
72.63	149.02	149.64	149.91	150.18	149.91	0.21	25.49
74.23	149.21	149.83	150.12	150.43	150.13	0.24	26.05
75.89	149.40	150.01	150.35	150.70	150.35	0.27	26.64
76.00	149.41	150.02	150.36	150.72	150.37	0.27	26.67
77.62	149.60	150.18	150.58	150.99	150.58	0.32	27.24
79.41	149.79	150.33	150.82	151.32	150.82	0.39	27.87
81.00	149.96	150.44	151.04	151.64	151.04	0.47	28.43
81.27	149.99	150.45	151.07	151.70	151.08	0.49	28.52
83.20	150.20	150.53	151.34	152.15	151.34	0.63	29.20
85.21	150.40	150.58	151.62	152.72	151.64	0.83	29.91
85.99	150.48	150.65	151.73	152.96	151.78	0.90	30.18
87.30	150.61	150.76	151.91	153.38	152.01	1.02	30.64
89.47	150.83	150.92	152.20	154.06	152.38	1.23	31.40
90.99	150.97	151.01	152.39	154.51	152.62	1.38	31.94
91.73	151.04	151.06	152.48	154.71	152.73	1.44	32.20
94.08	151.26	151.17	152.74	155.32	153.06	1.64	33.02
96.00	151.44	151.26	152.96	155.79	153.31	1.79	33.69
96.53	151.49	151.29	153.01	155.92	153.38	1.93	33.88
99.07	151.71	151.39	153.29	156.51	153.70	2.02	34.77
100.99	151.88	151.47	153.47	156.91	153.92	2.15	35.44
101.72	151.94	151.50	153.51	157.06	154.00	2.20	35.70
104.48	152.17	151.56	153.77	157.60	154.29	2.38	36.67
105.39	152.30	151.65	153.92	157.89	154.45	2.47	37.20
107.35	152.41	151.71	154.06	158.17	154.61	2.56	37.68
110.34	152.65	151.84	154.36	158.79	154.96	2.75	38.73
110.99	152.70	151.85	154.42	158.92	155.03	2.80	38.96
113.45	152.89	151.94	154.59	159.35	155.25	2.94	39.82
116.00	153.08	152.00	154.73	159.75	155.45	3.08	40.71

116.68	153.13	152.02	154.78	159.87	155.51	3.11	40.95
120.04	153.38	152.17	155.13	160.55	155.90	3.32	42.13
120.99	153.45	152.22	155.26	160.77	156.03	3.39	42.46
123.54	153.63	152.34	155.57	161.33	156.36	3.56	43.36
125.98	153.80	152.40	155.70	161.68	156.53	3.68	44.22
127.18	153.88	152.39	155.70	161.78	156.57	3.73	44.64
130.96	154.13	152.36	155.70	162.18	156.68	3.91	45.96
131.00	154.13	152.36	155.71	162.19	156.68	3.91	45.98
134.89	154.39	152.57	156.29	163.16	157.27	4.20	47.34
135.99	154.46	152.67	156.56	163.55	157.53	4.31	47.73
138.98	154.65	152.84	157.21	164.50	158.12	4.61	48.78
140.98	154.77	152.81	157.26	164.76	158.21	4.72	49.48
143.22	154.91	152.63	156.90	164.62	157.97	4.75	50.27
145.98	155.07	152.30	156.34	164.35	157.58	4.80	51.23
147.62	155.17	152.17	156.22	164.43	157.51	4.89	51.81
150.98	155.37	152.33	156.88	165.47	158.14	5.22	52.99
152.20	155.44	152.48	157.48	166.20	158.64	5.43	53.42
156.00	155.65	152.84	160.03	169.15	160.63	6.39	54.75
156.96	155.70	152.83	160.43	169.66	160.94	6.59	55.09
161.00	155.92	152.21	158.64	168.78	159.64	6.32	56.51
161.92	155.97	151.95	157.89	167.61	159.07	6.18	56.83
164.61	156.12	151.14	156.19	166.18	157.73	5.99	57.77
165.00	156.19	151.74	158.48	168.61	159.54	6.64	58.26
167.14	156.25	151.98	160.36	170.59	160.94	7.28	58.66
170.85	156.44	155.53	166.47	177.05	166.36	8.41	59.96
171.00	156.45	155.76	166.72	177.31	166.60	8.42	60.02
171.28	156.46	156.09	167.18	177.85	167.05	8.50	D:FR
174.00	156.60	162.66	174.01	184.78	173.83	8.64	D:FR
175.00	156.65	165.09	176.32	187.32	176.32	8.69	D:FR
176.00	156.70	167.52	179.04	189.86	178.82	8.73	D:FR
177.00	156.75	169.95	181.55	192.41	181.32	8.78	D:FR
178.00	156.80	172.39	184.05	194.98	183.83	8.83	D:FR
179.00	156.84	174.84	186.57	197.55	186.33	8.87	D:FR
180.00	156.89	177.28	189.09	200.11	188.84	8.92	D:FR

RUN NO. 42

JOHNSON & GIEKHART  
 AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 5 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HIT: SPECIFIED AT 30 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	123.27	123.15	123.30	123.46	123.30	0.12	0.35
5.06	127.66	127.57	127.72	127.88	127.72	0.12	1.78
10.43	132.64	132.61	132.76	132.91	132.76	0.12	3.66
14.34	135.18	135.19	135.34	135.49	135.34	0.12	5.03
20.83	138.29	138.36	138.51	138.66	138.51	0.12	7.31
25.90	140.14	140.26	140.41	140.57	140.42	0.12	9.09
30.85	141.63	141.81	141.96	142.12	141.96	0.12	10.83
35.76	142.90	143.14	143.29	143.44	143.29	0.12	12.55
40.69	144.01	144.31	144.46	144.61	144.46	0.12	14.28
45.80	145.03	145.39	145.54	145.69	145.54	0.12	16.08
50.87	145.94	146.35	146.51	146.67	146.51	0.12	17.85
55.80	146.74	147.21	147.37	147.54	147.37	0.13	19.58
60.55	147.44	147.97	148.14	148.32	148.15	0.13	21.25
61.00	147.51	148.04	148.21	148.39	148.22	0.14	21.41
61.71	147.61	148.15	148.32	148.50	148.33	0.14	21.66
62.92	147.78	148.33	148.51	148.69	148.51	0.14	22.08
64.76	147.95	148.51	148.70	148.89	148.70	0.15	22.52
65.45	148.12	148.70	148.89	149.09	148.89	0.15	22.97
65.99	148.19	148.78	148.97	149.17	148.97	0.15	23.16
66.79	148.29	148.89	149.08	149.29	149.09	0.16	23.44
68.17	148.47	149.07	149.28	149.50	149.29	0.17	23.93
69.60	148.65	149.26	149.49	149.72	149.49	0.18	24.43
71.00	148.82	149.44	149.69	149.93	149.68	0.19	24.92
71.09	148.83	149.45	149.69	149.94	149.70	0.19	24.95
72.63	149.02	149.64	149.91	150.18	149.91	0.21	25.49
74.23	149.21	149.83	150.12	150.43	150.13	0.24	26.05
75.89	149.40	150.01	150.35	150.70	150.35	0.27	26.64
76.00	149.41	150.02	150.36	150.72	150.37	0.27	26.67
77.62	149.60	150.18	150.58	150.99	150.58	0.32	27.24
79.41	149.79	150.33	150.82	151.32	150.82	0.39	27.87
81.00	149.96	150.44	151.04	151.64	151.04	0.47	28.43
81.27	149.99	150.45	151.07	151.70	151.08	0.49	28.52
83.20	150.20	150.53	151.34	152.15	151.34	0.63	29.20
85.21	150.40	150.58	151.62	152.72	151.64	0.83	29.91
85.99	150.48	150.65	151.73	152.96	151.78	0.90	30.18
87.30	150.61	150.76	151.91	153.38	152.01	1.02	30.64
89.47	150.83	150.92	152.20	154.06	152.38	1.23	31.40
90.99	150.97	151.01	152.39	154.51	152.62	1.39	31.94
91.73	151.04	151.06	152.48	154.71	152.73	1.44	32.20
94.08	151.26	151.17	152.74	155.32	153.06	1.64	33.02
96.00	151.44	151.26	152.96	155.79	153.31	1.79	33.69
96.53	151.49	151.29	153.01	155.92	153.38	1.83	33.88
99.07	151.71	151.39	153.29	156.51	153.70	2.02	34.77
100.99	151.88	151.47	153.47	156.91	153.92	2.15	35.44
101.72	151.94	151.50	153.53	157.06	154.00	2.20	35.70
104.48	152.17	151.59	153.77	157.60	154.29	2.38	36.67
105.99	152.30	151.65	153.92	157.89	154.45	2.47	37.20
107.35	152.41	151.71	154.06	158.17	154.61	2.56	37.68
110.34	152.65	151.84	154.36	158.79	154.96	2.75	38.73
110.99	152.70	151.86	154.42	158.92	155.03	2.80	38.96
113.45	152.80	151.94	154.59	159.35	155.25	2.94	39.82
116.00	153.03	152.00	154.73	159.75	155.45	3.09	40.71

116.68	153.13	152.02	154.78	159.87	155.51	3.11	40.95
120.04	153.38	152.17	155.13	160.55	155.90	3.32	42.13
120.99	153.45	152.22	155.26	160.77	156.03	3.39	42.46
123.54	153.63	152.34	155.57	161.33	156.36	3.56	43.36
125.98	153.80	152.40	155.70	161.68	156.53	3.68	44.22
127.18	153.88	152.39	155.70	161.78	156.57	3.73	44.64
130.96	154.13	152.36	155.70	162.18	156.68	3.91	45.96
131.00	154.13	152.36	155.71	162.19	156.68	3.91	45.98
131.80	154.19	152.38	155.76	162.33	156.76	3.96	46.26
134.89	154.39	152.98	157.54	164.41	158.26	4.50	47.34
135.99	154.46	153.12	158.17	165.16	158.77	4.72	47.73
138.98	154.65	153.38	159.89	167.19	160.14	5.40	48.78
140.98	154.77	153.49	161.05	168.54	161.03	5.88	49.48
143.22	154.91	154.27	162.33	170.05	162.29	6.16	50.27
144.42	154.98	154.66	163.03	170.92	162.88	6.35	DIFR
147.00	155.14	156.36	164.94	172.96	164.77	6.49	DIFR
148.00	155.19	157.03	165.69	173.76	165.51	6.54	DIFR
149.00	155.25	157.70	166.43	174.56	166.24	6.59	DIFR
150.00	155.31	158.33	167.17	175.36	166.97	6.65	DIFR
151.00	155.37	158.96	167.92	176.15	167.69	6.72	DIFR
152.00	155.43	159.59	168.66	176.98	168.43	6.80	DIFR
153.00	155.48	160.21	169.40	177.85	169.17	6.89	DIFR
154.00	155.54	160.84	170.15	178.72	169.92	6.99	DIFR
155.00	155.60	161.48	170.89	179.59	170.67	7.08	DIFR
156.00	155.65	162.12	171.63	180.45	171.42	7.16	DIFR
157.00	155.71	162.78	172.38	181.31	172.17	7.24	DIFR
158.00	155.76	163.43	173.12	182.17	172.92	7.32	DIFR
159.00	155.82	164.09	173.86	183.03	173.67	7.40	DIFR
160.00	155.87	164.72	174.61	183.89	174.42	7.49	DIFR
161.00	155.92	165.34	175.35	184.75	175.16	7.58	DIFR
162.00	155.98	165.97	176.10	185.61	175.90	7.67	DIFR
163.00	156.03	166.60	176.84	186.48	176.65	7.77	DIFR
164.00	156.08	167.24	177.59	187.35	177.41	7.86	DIFR
165.00	156.14	167.89	178.33	188.22	178.16	7.95	DIFR

RUN NO. 43

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 54 NMI

TERRAIN DELTA h: 0 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	129.29	129.14	129.35	129.56	129.35	0.16	0.35
5.06	133.68	132.33	133.78	135.52	133.87	1.25	1.79
10.43	138.67	136.17	138.95	142.70	139.21	2.57	3.70
14.34	141.20	138.31	141.15	146.27	141.97	3.13	5.08
20.83	144.31	141.11	144.67	150.42	145.35	3.67	7.38
25.90	146.16	142.90	146.60	152.76	147.37	3.90	9.18
30.85	147.65	144.38	148.18	154.62	149.00	4.05	10.94
35.76	148.92	145.66	149.54	156.18	150.40	4.16	12.68
40.69	150.03	146.81	150.74	157.53	151.63	4.24	14.42
45.80	151.05	147.86	151.86	158.74	152.76	4.30	16.23
50.87	151.96	148.81	152.87	159.82	153.77	4.35	18.03
55.80	152.76	149.67	153.77	160.78	154.68	4.39	19.78
60.89	153.51	150.50	154.63	161.70	155.55	4.43	21.58
65.75	154.18	151.24	155.41	162.51	156.32	4.46	23.31
70.79	154.82	151.97	156.17	163.32	157.09	4.49	25.09
75.63	155.39	152.63	156.87	164.07	157.79	4.53	26.81
80.97	155.98	153.31	157.64	164.92	158.56	4.59	28.70
85.83	156.49	153.87	158.36	165.77	159.27	4.70	30.42
90.93	156.99	154.27	159.08	166.71	159.96	4.90	32.23
96.00	157.46	154.55	159.71	167.56	160.55	5.12	34.03
96.53	157.51	151.23	154.07	157.83	154.36	2.59	34.22
97.79	157.62	153.65	157.21	161.12	157.32	2.92	34.66
99.07	157.73	179.50	183.19	187.24	183.30	3.02	35.12
100.39	157.85	153.65	157.48	161.68	157.60	3.14	35.58
101.00	157.90	151.72	155.35	159.61	155.54	3.09	35.80
101.72	157.96	151.53	154.61	158.95	155.01	2.91	36.06
103.09	158.08	153.63	157.75	162.24	157.87	3.36	36.54
104.48	158.19	180.29	184.57	189.19	184.67	3.48	37.03
105.90	158.31	153.61	158.03	162.79	158.14	3.59	37.54
106.00	158.32	153.17	157.60	162.37	157.71	3.59	37.57
107.35	158.43	151.82	155.17	160.07	155.65	3.24	38.05
108.83	158.55	153.62	158.32	163.37	158.43	3.81	38.50
110.34	158.67	181.20	186.03	191.24	186.15	3.92	39.11
111.00	158.72	160.16	165.07	170.34	165.18	3.98	39.34
111.88	158.79	153.60	158.60	163.96	158.71	4.05	39.66
113.45	158.91	152.14	155.74	161.25	156.34	3.59	40.21
115.05	159.03	153.56	158.90	164.56	159.00	4.30	40.78
116.00	159.10	160.43	165.86	171.61	165.96	4.37	41.12
116.68	159.15	182.10	187.60	193.41	187.69	4.42	41.36
118.34	159.27	153.55	159.20	165.17	159.30	4.54	41.95
120.04	159.40	152.46	156.35	162.47	157.04	3.95	42.55
121.00	159.47	152.75	157.29	163.49	157.80	4.21	42.89
121.78	159.52	153.49	159.51	165.79	159.59	4.81	43.16
123.54	159.65	183.04	189.26	195.69	189.33	4.94	43.79
125.34	159.77	153.43	159.83	166.43	159.89	5.08	44.43
126.00	159.82	153.06	158.04	164.70	158.56	4.56	44.66
127.18	159.90	152.79	156.99	163.77	157.79	4.33	45.08
129.05	160.03	153.51	160.16	167.14	160.26	5.32	45.74
130.86	160.15	183.99	190.98	198.14	191.03	5.53	46.42
131.00	160.16	182.26	189.26	196.43	189.31	5.53	46.43
132.91	160.28	153.69	160.51	167.86	160.67	5.54	47.11
134.89	160.41	153.14	157.68	165.22	158.61	4.77	47.81

136.00	160.46	153.43	158.60	166.25	159.37	5.04	48.20
136.92	160.54	153.87	160.87	168.60	161.10	5.76	48.53
138.98	160.67	184.80	192.63	200.54	192.65	6.15	49.26
141.00	160.79	154.09	161.51	169.63	161.73	6.08	49.98
141.08	160.80	154.06	161.25	169.38	161.54	5.99	50.01
143.22	160.93	153.50	158.43	166.79	159.50	5.25	50.77
145.40	161.06	154.25	161.64	170.26	152.02	6.26	51.54
146.00	161.10	155.39	164.00	172.68	164.02	6.76	51.75
147.62	161.19	184.99	193.74	202.62	193.78	6.89	52.33
149.89	161.32	154.45	162.07	171.20	162.54	6.55	53.13
150.99	161.39	154.06	159.91	169.17	160.97	5.96	53.52
152.20	161.45	153.85	159.28	168.70	160.52	5.88	53.95
154.56	161.53	154.57	162.52	172.24	163.07	6.91	54.78
155.99	161.67	160.05	169.84	179.74	169.87	7.69	55.29
156.96	161.72	183.03	192.92	202.95	192.96	7.78	55.64
159.41	161.86	154.65	163.02	173.43	163.66	7.35	56.51
161.00	161.95	154.09	160.55	171.11	161.83	5.72	57.07
161.92	161.99	154.05	160.30	170.91	161.66	6.66	57.39
164.49	162.13	155.05	163.62	174.35	164.29	7.56	58.31
166.00	162.21	159.52	170.39	181.20	170.37	8.47	58.84
167.14	162.27	175.88	186.83	197.69	186.80	8.52	59.25
169.90	162.41	155.70	164.44	175.41	165.13	7.71	60.22
171.00	162.47	155.49	162.72	173.73	163.90	7.13	60.61
172.83	162.56	155.57	162.11	173.19	163.53	6.96	61.26
174.97	162.67	156.49	163.96	175.12	165.11	7.33	62.02
176.00	162.72	157.10	165.69	176.91	166.51	7.76	62.38
176.15	162.73	157.20	165.99	177.22	166.75	7.84	62.44
176.92	162.76	157.67	167.62	178.90	168.04	8.30	62.71
177.47	162.79	158.01	168.84	180.18	169.00	8.66	62.91
177.89	162.81	158.26	169.73	181.09	169.69	8.92	63.05
178.22	162.83	158.45	170.36	181.73	170.19	9.10	63.17
178.48	162.84	158.86	170.81	182.19	170.63	9.12	63.27
178.71	162.85	159.15	171.12	182.52	170.94	9.13	63.35
178.99	162.86	159.43	171.41	182.82	171.23	9.14	63.44
179.62	162.90	161.18	173.20	184.64	173.02	9.17	63.67
181.00	162.96	164.99	177.09	188.60	176.91	9.22	64.15
182.55	163.04	169.30	181.48	193.05	181.29	9.28	DIFR
185.00	163.15	178.58	190.94	202.59	190.72	9.38	DIFR
186.00	163.20	182.36	194.79	206.48	194.56	9.42	DIFR
187.00	163.24	186.14	198.65	210.37	198.40	9.47	DIFR
188.00	163.29	189.92	202.51	214.25	202.24	9.51	DIFR
189.00	163.34	193.44	206.09	217.87	205.82	9.55	SCAT
190.00	163.38	195.02	207.74	219.57	207.46	9.59	SCAT



RUN NO. 44

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTRO

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	129.29	129.20	129.35	129.50	129.35	0.12	0.35
5.06	133.68	133.63	133.78	133.94	133.78	0.12	1.79
10.43	138.67	138.70	138.85	139.00	138.85	0.12	3.70
14.34	141.20	141.30	141.45	141.61	141.45	0.12	5.08
20.83	144.31	144.52	144.67	144.82	144.67	0.12	7.38
25.90	146.16	146.45	146.60	146.76	146.60	0.12	9.18
30.85	147.65	148.03	148.18	148.34	148.19	0.12	10.94
35.76	148.92	149.39	149.54	149.69	149.54	0.12	12.68
40.69	150.03	150.59	150.74	150.90	150.75	0.12	14.42
45.80	151.05	151.71	151.86	152.02	151.86	0.12	16.23
50.87	151.96	152.71	152.87	153.03	152.87	0.12	18.03
55.80	152.76	153.61	153.77	153.94	153.77	0.13	19.78
60.89	153.51	154.46	154.63	154.81	154.64	0.14	21.58
65.75	154.18	155.22	155.41	155.61	155.41	0.15	23.31
70.79	154.82	155.88	156.17	156.49	156.17	0.24	25.09
75.63	155.39	156.67	156.87	157.74	156.89	0.65	26.81
80.97	155.98	156.30	157.64	159.15	157.69	1.11	28.70
85.83	156.49	156.43	158.36	160.55	158.44	1.61	30.42
90.93	156.99	156.38	159.08	162.09	159.18	2.23	32.23
96.00	157.46	156.34	159.71	163.41	159.81	2.76	34.03
96.53	157.51	156.93	159.77	163.53	160.06	2.59	34.22
97.79	157.62	157.02	159.91	163.82	160.23	2.67	34.66
99.07	157.73	157.10	160.05	164.11	160.40	2.75	35.12
100.39	157.85	157.18	160.20	164.40	160.57	2.83	35.56
101.00	157.90	157.22	160.26	164.52	160.64	2.87	35.80
101.72	157.96	157.26	160.34	164.68	160.73	2.91	36.06
103.09	158.08	157.34	160.49	164.97	160.90	3.00	36.54
104.48	158.19	157.42	160.63	165.25	161.07	3.08	37.03
105.90	158.31	157.50	160.78	165.54	161.24	3.16	37.54
106.00	158.32	157.50	160.79	165.56	161.25	3.17	37.57
107.35	158.43	157.58	160.93	165.83	161.41	3.24	38.05
108.83	158.55	157.66	161.07	166.13	161.59	3.33	38.58
110.34	158.67	157.75	161.22	166.43	161.76	3.41	39.11
111.00	158.72	157.79	161.29	166.56	161.84	3.45	39.34
111.88	158.79	157.83	161.38	166.73	161.94	3.50	39.66
113.45	158.91	157.92	161.53	167.04	162.12	3.59	40.21
115.05	159.03	158.01	161.68	167.35	162.30	3.68	40.78
116.00	159.10	158.06	161.77	167.53	162.41	3.73	41.12
116.68	159.15	158.09	161.84	167.66	162.49	3.77	41.36
118.34	159.27	158.18	162.00	167.97	162.67	3.86	41.95
120.04	159.40	158.27	162.16	168.28	162.86	3.95	42.55
121.06	159.47	158.32	162.25	168.46	162.96	4.00	42.89
121.78	159.52	158.36	162.32	168.60	163.04	4.04	43.16
123.54	159.65	158.44	162.49	168.92	163.23	4.13	43.79
125.34	159.77	158.53	162.65	169.25	163.43	4.23	44.43
126.00	159.82	158.57	162.71	169.37	163.50	4.26	44.66
127.18	159.90	158.62	162.82	169.61	163.63	4.33	45.08
129.05	160.03	158.71	163.00	169.97	163.84	4.44	45.74
130.96	160.15	158.81	163.17	170.34	164.05	4.55	46.42
131.00	160.16	158.81	163.18	170.34	164.05	4.55	46.43
132.91	160.28	158.90	163.35	170.71	164.26	4.66	47.11
134.83	160.41	158.99	163.54	171.08	164.47	4.77	47.81

136.00	160.48	159.05	163.64	171.28	164.56	4.83	48.20
136.92	160.54	159.09	163.72	171.45	164.69	4.86	48.53
138.98	160.67	159.19	163.91	171.83	164.91	5.00	49.26
141.00	160.79	159.27	164.10	172.23	165.13	5.12	49.98
141.08	160.80	159.28	164.11	172.24	165.14	5.12	50.01
143.22	160.93	159.37	164.30	172.66	165.37	5.25	50.77
145.40	161.06	159.46	164.51	173.12	165.62	5.40	51.54
146.00	161.10	159.49	164.56	173.25	165.69	5.44	51.75
147.62	161.19	159.56	164.72	173.60	165.88	5.55	52.33
149.89	161.32	159.65	164.92	174.06	166.13	5.70	53.13
150.99	161.39	159.69	165.01	174.28	166.24	5.77	53.52
152.20	161.46	159.69	165.12	174.54	166.36	5.80	53.95
154.56	161.59	159.69	165.36	175.09	166.63	6.09	54.78
155.99	161.67	159.70	165.55	175.46	166.82	6.23	55.29
156.96	161.72	159.71	165.67	175.70	166.94	6.32	55.64
159.41	161.86	159.60	165.82	176.24	167.13	6.57	56.51
161.00	161.95	159.57	165.81	176.37	167.16	6.64	57.07
161.92	161.99	159.58	165.83	176.44	167.19	6.66	57.39
164.49	162.13	159.73	166.30	177.04	167.60	6.83	58.31
166.00	162.21	159.87	166.90	177.71	168.08	7.03	58.84
167.14	162.27	159.92	167.30	178.16	168.39	7.17	59.25
169.90	162.41	159.60	166.77	177.74	167.95	7.14	60.22
171.00	162.47	159.33	166.14	177.15	167.45	7.03	60.51
172.83	162.56	158.97	165.50	176.58	166.92	6.96	61.26
174.97	162.67	158.95	156.11	177.26	167.35	7.21	62.02
176.00	162.72	159.08	166.97	178.18	168.01	7.50	62.38
176.15	162.73	159.11	167.12	178.35	168.12	7.56	62.44
176.92	162.76	159.23	167.98	179.27	168.77	7.85	62.71
177.47	162.79	159.33	168.64	179.98	169.27	8.08	62.91
177.89	162.81	159.41	169.13	180.49	169.64	8.24	63.05
178.22	162.83	159.47	169.48	180.66	169.91	8.36	63.17
178.43	162.84	159.51	169.70	181.08	170.07	8.43	63.24
178.48	162.84	159.54	169.89	181.27	170.21	8.49	63.27
178.71	162.85	159.64	170.63	182.03	170.75	8.75	63.35
179.62	162.90	161.60	173.63	185.07	173.45	9.17	63.67
181.00	162.96	166.05	178.15	189.65	177.96	9.22	64.16
181.96	163.01	169.16	181.32	192.86	181.12	9.26	DIFR
184.00	163.10	176.97	189.24	200.86	189.04	9.33	DIFR
185.00	163.15	180.77	193.13	204.78	192.91	9.38	DIFR
186.00	163.20	184.57	197.01	208.70	196.78	9.42	DIFR
187.00	163.24	188.39	200.89	212.61	200.65	9.47	DIFR
188.00	163.29	192.19	204.78	216.53	204.52	9.51	DIFR
189.00	163.34	194.45	207.10	218.88	206.83	9.55	SCA1

RUN NO. 45

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSI

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSI

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN ELEVATION AT SITE: 0 FT

TERRAIN DELTA: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4425 NMI

OBSTACLE ID: SPECIFIED AT 25 FT ABOVE MSI

CLIMATE: DESERT

MINIMUM MONTHLY MEAN: 26.0 N UNITS

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION COEFFICIENT: DETERMINES M/DIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	129.29	129.20	129.35	129.50	129.35	0.12	0.35
5.06	133.68	133.63	133.78	133.94	133.78	0.12	1.79
10.43	138.67	138.70	138.85	139.00	138.85	0.12	3.70
14.34	141.20	141.30	141.45	141.61	141.45	0.12	5.08
20.83	144.31	144.52	144.67	144.82	144.67	0.12	7.33
25.90	146.16	146.45	146.60	146.76	146.60	0.12	9.18
30.85	147.65	148.03	148.18	148.34	148.19	0.12	10.94
35.76	148.92	149.39	149.54	149.69	149.54	0.12	12.68
40.69	150.03	150.59	150.74	150.90	150.75	0.12	14.42
45.80	151.05	151.71	151.86	152.02	151.86	0.12	16.23
50.87	151.96	152.71	152.87	153.03	152.87	0.12	18.03
55.80	152.76	153.61	153.77	153.94	153.77	0.13	19.78
60.89	153.51	154.40	154.63	154.81	154.64	0.14	21.58
65.75	154.18	155.22	155.41	155.61	155.41	0.15	23.31
70.79	154.82	155.86	156.17	156.49	156.17	0.24	25.09
75.63	155.39	156.07	156.87	157.74	156.89	0.65	26.81
80.97	155.98	156.30	157.64	159.15	157.69	1.11	28.70
85.83	156.49	156.43	158.36	160.55	156.44	1.61	30.42
90.93	156.99	156.38	159.08	162.09	159.18	2.23	32.23
96.00	157.46	156.34	159.71	163.41	159.81	2.76	34.03
96.53	157.51	156.93	159.77	163.53	160.06	2.59	34.22
97.79	157.62	157.02	159.91	163.82	160.23	2.67	34.66
99.07	157.73	157.10	160.05	164.11	160.40	2.75	35.12
100.39	157.85	157.18	160.20	164.40	160.57	2.83	35.58
101.00	157.90	157.22	160.26	164.53	160.64	2.87	35.80
101.72	157.96	157.26	160.34	164.68	160.73	2.91	36.06
103.09	158.08	157.31	160.49	164.97	160.90	3.00	36.54
104.48	158.19	157.42	160.63	165.25	161.07	3.08	37.03
105.90	158.31	157.50	160.78	165.54	161.24	3.16	37.54
106.00	158.32	157.50	160.79	165.56	161.25	3.17	37.57
107.35	158.43	157.58	160.93	165.83	161.41	3.24	38.05
108.83	158.55	157.66	161.07	166.13	161.59	3.32	38.58
110.34	158.67	157.75	161.22	166.43	161.76	3.41	39.11
111.00	158.72	157.75	161.29	166.56	161.84	3.45	39.34
111.88	158.79	157.83	161.38	166.72	161.94	3.50	39.66
113.45	158.91	157.92	161.53	167.04	162.12	3.59	40.21
115.05	159.03	158.01	161.68	167.35	162.30	3.68	40.78
116.00	159.10	158.06	161.77	167.53	162.41	3.73	41.12
116.68	159.15	158.09	161.84	167.66	162.49	3.77	41.36
118.34	159.27	158.18	162.00	167.97	162.67	3.86	41.95
120.04	159.40	158.27	162.16	168.28	162.86	3.95	42.55
121.00	159.47	158.32	162.25	168.46	162.96	4.00	42.89
121.78	159.52	158.36	162.32	168.60	163.04	4.04	43.16
123.54	159.65	158.44	162.49	168.92	163.23	4.13	43.79
125.34	159.77	158.53	162.65	169.25	163.43	4.23	44.43
126.00	159.82	158.57	162.71	169.37	163.50	4.26	44.66
127.18	159.90	158.62	162.82	169.61	163.63	4.33	45.08
129.05	160.03	158.71	163.00	169.97	163.84	4.44	45.74
130.96	160.15	158.81	163.17	170.34	164.05	4.55	46.42
131.00	160.16	158.81	163.18	170.34	164.05	4.55	46.43
132.91	160.28	158.90	163.35	170.71	164.26	4.66	47.11
134.89	160.41	158.99	163.54	171.08	164.47	4.77	47.81

136.00	160.48	159.0	163.64	171.28	164.59	4.83	48.20
136.92	160.54	159.09	163.72	171.45	164.69	4.88	48.53
138.58	160.67	159.19	163.91	171.83	164.91	5.00	49.26
141.00	160.79	159.27	164.10	172.23	165.13	5.12	49.98
141.08	160.80	159.28	164.11	172.24	165.14	5.12	50.01
143.22	160.93	159.37	164.30	172.66	165.37	5.25	50.77
145.40	161.06	159.46	164.51	173.12	165.62	5.40	51.54
146.00	161.10	159.49	164.56	173.25	165.69	5.44	51.75
147.62	161.19	159.56	164.72	173.60	165.88	5.55	52.33
149.89	161.32	159.65	161.92	174.05	166.13	5.70	53.13
150.99	161.39	159.69	165.01	174.28	166.24	5.77	53.52
152.20	161.46	159.69	165.12	174.54	166.36	5.88	53.95
154.56	161.59	159.69	165.36	175.09	166.63	6.09	54.78
155.95	161.67	159.70	165.55	175.46	166.82	6.23	55.29
156.96	161.72	159.71	165.67	175.70	166.94	6.32	55.64
159.41	161.86	159.60	165.82	176.24	167.13	6.57	56.51
161.00	161.95	159.57	165.81	176.37	167.16	6.64	57.07
161.92	161.99	159.58	165.83	176.44	167.19	6.66	57.39
164.49	162.13	159.73	166.30	177.04	167.60	6.83	58.31
166.00	162.21	159.87	166.90	177.71	168.08	7.03	58.84
166.16	162.22	159.88	166.97	177.78	168.13	7.05	58.90
167.14	162.27	160.18	168.52	179.37	169.30	7.52	59.25
169.90	162.41	161.70	172.85	183.82	172.79	8.64	60.22
171.00	162.47	163.32	174.58	185.59	174.50	8.70	60.61
171.28	162.48	163.62	175.03	186.11	174.93	8.78	D:FR
174.00	162.62	170.60	182.23	193.41	182.09	8.91	D:FR
175.00	162.67	173.18	184.89	196.09	184.73	8.95	D:FR
176.00	162.72	175.75	187.54	198.80	187.37	9.00	D:FR
177.00	162.77	178.34	190.19	201.50	190.02	9.05	D:FR
178.00	162.82	180.92	192.84	204.21	192.67	9.10	D:FR
179.00	162.87	183.51	195.49	206.91	195.32	9.14	D:FR
180.00	162.91	186.10	198.15	209.61	197.96	9.18	D:FR

RUN NO. 46

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NM

TERRAIN DELTA n: 50FT

CLIMATE: DESERT

SURFACE REFLECTION LOSS: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NM

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HT: SPECIFIED AT 50 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NM)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NM)
0.99	129.29	129.20	129.35	129.50	129.35	0.12	0.35
5.06	133.60	133.63	133.78	133.94	133.78	0.12	1.79
10.43	138.67	138.70	138.85	139.00	138.85	0.12	3.70
14.34	141.20	141.30	141.45	141.61	141.45	0.12	5.08
20.83	144.31	144.52	144.67	144.82	144.57	0.12	7.38
25.90	146.16	146.45	146.60	146.76	146.60	0.12	9.18
30.85	147.65	148.03	148.18	148.34	148.19	0.12	10.94
35.76	148.92	149.39	149.54	149.69	149.54	0.12	12.68
40.69	150.03	150.59	150.74	150.90	150.75	0.12	14.42
45.80	151.05	151.71	151.86	152.02	151.86	0.12	16.23
50.87	151.96	152.71	152.87	153.03	152.87	0.12	18.03
55.80	152.76	153.61	153.77	153.94	153.77	0.13	19.78
60.89	153.51	154.46	154.63	154.81	154.64	0.14	21.58
65.75	154.18	155.22	155.41	155.61	155.41	0.15	23.31
70.79	154.82	155.86	156.17	156.49	156.17	0.24	25.09
75.63	155.39	156.07	156.87	157.74	156.89	0.65	26.81
80.97	155.93	156.30	157.64	159.15	157.69	1.11	28.70
85.83	156.49	156.43	158.36	160.55	158.44	1.61	30.42
90.93	156.99	156.38	159.08	162.09	159.18	2.23	32.23
96.00	157.46	156.34	159.71	163.41	159.81	2.76	34.03
96.53	157.51	156.93	159.77	163.53	160.06	2.59	34.22
97.79	157.62	157.02	159.91	163.82	160.23	2.67	34.66
99.07	157.73	157.10	160.05	164.11	160.40	2.75	35.12
100.39	157.85	157.18	160.20	164.40	160.57	2.83	35.58
101.00	157.90	157.22	160.26	164.53	160.64	2.87	35.80
101.72	157.96	157.26	160.34	164.68	160.73	2.91	36.06
103.09	158.08	157.34	160.49	164.97	160.90	3.00	36.54
104.48	158.19	157.42	160.63	165.25	161.07	3.08	37.03
105.90	158.31	157.50	160.78	165.54	161.24	3.16	37.54
106.00	158.32	157.50	160.79	165.56	161.25	3.17	37.57
107.35	158.43	157.58	160.93	165.83	161.41	3.24	38.05
108.83	158.55	157.66	161.07	166.13	161.59	3.33	38.58
110.34	158.67	157.75	161.22	166.43	161.76	3.41	39.11
111.00	158.72	157.79	161.29	166.56	161.84	3.45	39.34
111.88	158.79	157.83	161.38	166.73	161.94	3.50	39.66
113.45	158.91	157.92	161.53	167.04	162.12	3.59	40.21
115.05	159.03	158.01	161.68	167.35	162.30	3.68	40.78
116.00	159.10	158.06	161.77	167.53	162.41	3.73	41.12
116.68	159.15	158.09	161.84	167.66	162.49	3.77	41.36
118.34	159.27	158.18	162.00	167.97	162.67	3.86	41.95
120.04	159.40	158.27	162.16	168.28	162.86	3.95	42.55
121.00	159.47	158.32	162.25	168.46	162.96	4.00	42.89
121.78	159.52	158.36	162.32	168.60	163.04	4.04	43.16
123.54	159.65	158.44	162.49	168.92	163.23	4.13	43.79
125.34	159.77	158.53	162.65	169.25	163.43	4.23	44.43
126.00	159.82	158.57	162.71	169.37	163.50	4.26	44.66
127.18	159.90	158.62	162.82	169.61	163.63	4.33	45.08
129.05	160.03	158.71	163.00	169.97	163.84	4.44	45.74
130.96	160.15	158.81	163.17	170.34	164.05	4.55	46.42
131.00	160.16	158.81	163.18	170.34	164.05	4.55	46.43
132.91	160.28	158.90	163.35	170.71	164.26	4.66	47.11
134.89	160.41	159.99	163.54	171.08	164.47	4.77	47.81

135.45	160.45	159.02	163.59	171.18	164.53	4.80	48.31
136.00	160.48	159.16	164.00	171.65	164.88	4.92	48.20
136.92	160.54	159.37	164.70	172.43	165.45	5.13	48.53
138.98	160.67	159.73	166.27	174.19	166.70	5.65	49.26
141.00	160.79	160.01	167.81	175.94	167.91	6.22	49.98
141.08	160.80	160.02	167.87	176.01	167.96	6.25	50.01
144.42	161.00	161.82	170.42	178.82	170.36	6.64	DIFR
147.00	161.16	163.62	172.41	180.94	172.33	6.77	DIFR
148.00	161.21	164.30	173.19	181.77	173.09	6.82	DIFR
149.00	161.27	164.96	173.96	182.60	173.85	6.89	DIFR
150.00	161.33	165.63	174.74	183.42	174.60	6.95	DIFR
151.00	161.39	166.30	175.51	184.24	175.36	7.01	DIFR
152.00	161.45	166.97	176.29	185.09	176.13	7.08	DIFR
153.00	161.50	167.64	177.06	185.99	176.91	7.17	DIFR
154.00	161.56	168.32	177.84	186.88	177.69	7.25	DIFR
155.00	161.62	169.00	178.62	187.77	178.47	7.33	DIFR
156.00	161.67	169.69	179.39	188.66	179.26	7.41	DIFR
157.00	161.73	170.38	180.17	189.55	180.04	7.49	DIFR
158.00	161.78	171.06	180.95	190.44	180.83	7.57	DIFR
159.00	161.84	171.71	181.72	191.33	181.60	7.67	DIFR
160.00	161.89	172.36	182.50	192.22	182.37	7.76	DIFR
161.00	161.95	173.02	183.28	193.10	183.14	7.85	DIFR
162.00	162.00	173.68	184.06	193.99	183.92	7.93	DIFR
163.00	162.05	174.35	184.83	194.87	184.70	8.01	DIFR
164.00	162.11	175.03	185.61	195.75	185.47	8.09	DIFR
165.00	162.16	175.71	186.39	196.62	186.25	8.17	DIFR
166.00	162.21	176.40	187.17	197.50	187.03	8.24	DIFR

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI

TERRAIN DELTA h: 0 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

RUN NO: 47

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	132.81	132.69	132.90	133.12	132.90	0.16	0.75
5.06	137.20	135.91	137.36	139.09	137.45	1.25	1.80
10.43	142.19	139.78	142.46	146.32	142.83	2.57	3.71
14.34	144.73	141.96	145.10	149.91	145.62	3.13	5.11
20.83	147.83	144.81	148.37	154.12	149.06	3.67	7.42
25.90	149.68	146.65	150.35	156.51	151.12	3.90	9.23
30.85	151.17	148.17	151.98	158.41	152.80	4.05	10.99
35.76	152.44	149.50	153.38	160.01	154.24	4.16	12.74
40.69	153.55	150.69	154.63	161.42	155.52	4.24	14.49
45.80	154.57	151.79	155.79	162.67	156.69	4.30	16.31
50.87	155.48	152.79	156.65	163.80	157.75	4.35	18.12
55.80	156.28	153.70	157.80	164.81	158.71	4.39	19.88
60.89	157.04	154.58	158.72	165.78	159.63	4.43	21.69
65.75	157.70	155.37	159.55	166.66	160.46	4.46	23.42
70.79	158.34	156.14	160.37	167.55	161.29	4.51	25.21
75.63	158.91	156.84	161.13	168.39	162.06	4.56	26.94
80.97	159.50	157.59	161.96	169.32	162.89	4.63	28.84
85.89	160.01	158.21	162.75	170.23	163.67	4.75	30.57
90.93	160.51	158.67	163.54	171.25	164.43	4.96	32.39
95.99	160.98	159.03	164.24	172.17	165.09	5.17	34.19
100.76	161.40	159.34	164.85	172.96	165.66	5.35	35.89
105.90	161.83	159.98	165.82	174.09	166.58	5.54	37.72
110.88	162.23	160.75	166.92	175.36	167.63	5.73	39.49
115.99	162.62	161.56	168.08	176.68	168.73	5.92	41.31
115.88	162.67	161.00	160.93	167.22	161.36	4.39	41.56
117.79	162.75	162.27	164.06	170.46	164.25	4.76	41.95
118.91	162.84	167.19	193.08	199.58	193.27	4.84	42.35
120.04	162.92	168.30	164.31	170.92	164.50	4.93	42.76
121.00	162.99	166.25	161.49	168.19	161.94	4.68	43.10
121.19	163.00	166.24	161.43	168.15	161.91	4.67	43.17
122.36	163.09	168.29	164.57	171.39	164.74	5.12	43.58
123.54	163.17	187.88	194.29	201.22	194.45	5.21	44.00
124.74	163.25	168.30	164.84	171.87	164.99	5.30	44.43
125.95	163.34	166.48	161.96	169.12	162.49	4.95	44.86
126.00	163.34	166.49	161.97	169.13	162.49	4.95	44.88
127.18	163.42	168.35	165.11	172.39	165.27	5.49	45.30
128.43	163.51	188.67	195.54	202.95	195.71	5.58	45.74
129.69	163.59	168.35	166.39	172.92	165.54	5.69	46.19
130.96	163.67	166.73	162.52	170.21	163.11	5.28	46.65
131.00	163.68	166.74	162.53	170.22	163.12	5.28	46.66
132.26	163.76	168.34	166.66	173.51	165.83	5.93	47.11
133.57	163.85	189.33	196.81	204.79	196.96	6.04	47.57
134.89	163.93	168.36	165.98	174.11	161.14	6.15	48.05
136.00	164.01	166.99	163.18	171.44	163.83	5.67	48.44
136.24	164.02	166.98	163.12	171.41	163.79	5.66	48.53
137.60	164.10	168.42	166.29	174.72	166.47	6.37	49.01
138.98	164.19	189.96	198.02	206.61	198.18	6.50	49.50
140.37	164.28	168.38	166.61	175.35	166.77	6.63	50.00
141.00	164.32	167.37	164.53	173.34	165.04	6.25	50.22
141.79	164.36	167.23	163.77	172.66	164.50	6.05	50.50
143.22	164.45	168.36	166.95	176.03	167.10	6.90	51.01
144.67	164.54	190.26	199.02	208.32	199.19	7.00	51.53

146.00	164.62	159.05	167.97	177.46	168.15	7.19	52.00
146.14	164.63	158.35	167.29	176.80	167.47	7.21	52.05
147.62	164.71	157.32	164.47	174.19	165.27	6.62	52.58
149.13	164.80	158.26	167.66	177.65	167.84	7.58	53.12
150.66	164.89	189.89	199.51	209.70	199.69	7.74	53.66
151.00	164.91	170.36	180.00	190.21	180.18	7.76	53.78
152.20	164.98	158.29	168.04	178.30	168.20	7.82	54.21
153.77	165.07	157.58	165.23	175.55	166.06	7.05	54.77
155.36	165.16	158.45	168.45	178.82	168.56	7.96	55.33
156.90	165.19	162.38	172.42	182.82	172.53	7.98	55.56
158.96	165.25	186.71	198.82	209.25	198.92	8.02	55.91
158.59	165.34	158.60	168.88	179.37	168.95	8.11	56.49
160.24	165.43	158.10	166.11	176.67	166.90	7.28	57.09
161.00	165.47	158.27	165.77	177.37	167.43	7.48	57.34
161.92	165.52	158.75	169.36	180.00	169.37	8.30	57.67
163.63	165.61	185.11	195.85	206.56	195.85	8.39	58.28
165.37	165.70	159.02	169.90	180.71	169.88	8.47	58.90
166.00	165.73	158.85	168.15	178.99	168.63	7.87	59.13
167.14	165.79	158.80	167.21	178.10	167.96	7.56	59.53
168.97	165.89	159.44	170.56	181.52	170.51	8.62	60.18
170.85	165.98	177.86	189.19	200.22	189.10	8.73	60.85
171.00	165.99	176.04	187.38	198.42	187.28	8.74	60.91
172.83	166.08	160.14	171.48	182.58	171.41	8.77	61.56
174.97	166.19	160.36	169.26	180.46	169.98	7.87	62.32
176.00	166.24	160.78	170.16	181.45	170.75	8.09	62.69
176.57	166.27	161.08	171.09	182.39	171.49	8.33	62.89
177.48	166.31	161.61	173.03	184.41	173.02	8.91	63.21
178.06	166.34	162.53	174.51	185.92	174.33	9.14	63.42
178.46	166.36	163.58	175.58	187.01	175.40	9.15	63.57
178.81	166.39	164.32	176.35	187.79	176.17	9.17	63.69
179.07	166.39	164.83	176.87	188.33	176.69	9.18	63.78
179.28	166.40	165.18	177.24	188.70	177.05	9.19	63.86
179.45	166.41	165.42	177.48	188.96	177.30	9.19	63.92
179.51	166.41	165.48	177.55	189.03	177.37	9.20	63.94
180.18	166.44	167.72	179.82	191.33	179.64	9.22	64.18
181.00	166.48	170.49	182.64	194.10	182.45	9.26	64.47
182.55	166.56	175.71	187.94	199.54	187.74	9.31	DIFR
185.00	166.67	186.40	198.82	210.51	198.59	9.42	DIFR
186.00	166.72	190.76	203.26	214.98	203.02	9.46	DIFR
187.00	166.77	195.12	207.70	219.45	207.44	9.50	DIFR
188.00	166.81	199.38	212.03	223.80	211.76	9.54	SCAT
189.00	166.86	201.33	214.04	225.86	213.76	9.59	SCAT
190.00	166.90	203.04	215.82	227.70	215.64	9.63	SCAT



RUN NO. 48

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOSS: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HIT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	132.81	132.75	132.90	133.05	132.90	0.12	0.35
5.06	137.20	137.21	137.36	137.51	137.36	0.12	1.80
10.43	142.19	142.31	142.46	142.62	142.47	0.12	3.71
14.34	144.73	144.95	145.10	145.25	145.10	0.12	5.11
20.83	147.83	148.22	148.37	148.52	148.37	0.12	7.42
25.90	149.88	150.20	150.35	150.50	150.35	0.12	9.23
30.95	151.17	151.83	151.98	152.13	151.98	0.12	10.99
35.76	152.44	153.23	153.38	153.53	153.38	0.12	12.74
40.69	153.55	154.48	154.63	154.78	154.63	0.12	14.49
45.80	154.67	155.64	155.79	155.95	155.79	0.12	16.31
50.87	155.48	156.70	156.85	157.01	156.85	0.12	18.12
55.80	156.20	157.64	157.80	157.97	157.80	0.13	19.88
60.89	157.04	158.55	158.72	158.90	158.72	0.14	21.69
65.75	157.70	159.03	159.55	160.10	159.56	0.42	23.42
70.79	158.34	159.35	160.37	161.52	160.41	0.85	25.21
75.81	158.91	159.70	161.13	162.82	161.21	1.22	26.94
80.97	159.50	160.12	161.96	164.23	162.09	1.61	28.84
85.83	160.01	160.42	162.75	165.60	162.91	2.03	30.57
90.93	160.51	160.63	163.54	167.12	163.72	2.50	32.39
95.99	160.98	160.62	164.24	168.46	164.43	3.07	34.19
100.76	161.40	160.74	164.85	169.58	165.04	3.46	35.89
105.90	161.83	161.20	165.82	171.05	166.01	3.85	37.72
110.88	162.23	161.82	166.92	172.64	167.11	4.23	39.49
115.99	162.62	162.46	168.08	174.30	168.27	4.63	41.31
116.88	162.87	161.80	168.73	173.02	167.15	4.39	41.56
117.79	162.75	161.86	168.86	173.25	167.30	4.46	41.95
118.91	162.84	161.93	168.99	173.49	167.44	4.53	42.35
120.04	162.92	161.99	167.12	173.73	167.58	4.60	42.70
121.00	162.99	162.05	167.23	173.92	167.70	4.65	43.10
121.19	163.00	162.06	167.25	173.96	167.72	4.67	43.17
122.36	163.09	162.12	167.38	174.20	167.87	4.73	43.58
123.54	163.17	162.19	167.52	174.45	168.02	4.80	44.00
124.74	163.25	162.25	167.65	174.69	168.16	4.87	44.43
125.95	163.34	162.32	167.79	174.95	168.32	4.95	44.86
126.00	163.34	162.32	167.80	174.96	168.32	4.95	44.88
127.18	163.42	162.38	167.93	175.22	168.47	5.03	45.30
128.43	163.51	162.45	168.08	175.49	168.63	5.11	45.74
129.69	163.59	162.52	168.22	175.76	168.79	5.19	46.19
130.96	163.67	162.58	168.37	176.05	168.96	5.28	46.65
131.00	163.68	162.58	168.37	176.06	168.97	5.28	46.66
132.26	163.76	162.65	168.52	176.35	169.13	5.37	47.11
133.57	163.85	162.71	168.67	176.65	169.30	5.47	47.57
134.89	163.93	162.78	168.83	176.96	169.48	5.56	48.05
135.00	164.00	162.83	168.98	177.21	169.62	5.64	48.44
136.24	164.02	162.84	168.98	177.27	169.65	5.66	48.53
137.80	164.10	162.91	169.14	177.58	169.83	5.75	49.01
138.98	164.19	162.98	169.30	177.89	170.01	5.85	49.50
140.37	164.28	163.05	169.47	178.21	170.19	5.95	50.00
141.70	164.32	163.08	169.54	178.35	170.27	5.99	50.22
141.79	164.36	163.10	169.64	178.53	170.37	6.03	50.50
143.22	164.45	163.13	169.81	178.89	170.56	6.18	51.01
144.87	164.54	163.15	169.98	179.28	170.75	6.33	51.53

146.00	164.62	163.17	170.14	179.62	170.92	6.45	52.00
146.14	164.63	163.17	170.16	179.66	170.94	6.47	52.05
147.62	164.71	163.19	170.34	180.06	171.14	6.62	52.58
149.13	164.80	163.18	170.52	180.51	171.35	6.80	53.12
150.66	164.89	163.21	170.71	180.90	171.55	6.94	53.66
151.00	164.91	163.24	170.75	180.96	171.59	6.95	53.78
152.20	164.98	163.33	170.90	181.15	171.73	6.99	54.21
153.77	165.07	163.44	171.09	181.40	171.92	7.05	54.77
155.35	165.16	163.55	171.29	181.66	172.11	7.10	55.33
156.00	165.19	163.60	171.37	181.77	172.19	7.13	55.56
156.96	165.25	163.66	171.50	181.93	172.31	7.16	55.91
158.59	165.34	163.77	171.70	182.16	172.49	7.21	56.49
160.24	165.43	163.88	171.88	182.44	172.68	7.28	57.08
161.00	165.47	163.93	171.98	182.58	172.77	7.31	57.34
161.92	165.52	163.99	172.12	182.77	172.91	7.36	57.67
163.63	165.61	164.10	172.41	183.14	173.17	7.46	58.28
165.37	165.70	164.17	172.57	183.38	173.32	7.53	58.90
166.00	165.73	164.18	172.57	183.41	173.33	7.53	59.13
167.14	165.79	164.19	172.58	183.48	173.37	7.56	59.53
168.97	165.89	164.24	173.03	184.00	173.71	7.74	60.18
170.85	165.98	164.27	173.89	184.92	174.33	8.07	60.85
171.00	165.99	164.27	173.93	184.97	174.36	8.09	60.91
172.83	166.08	164.05	173.51	184.61	174.02	8.04	61.56
174.97	166.19	163.65	172.55	183.75	173.27	7.87	62.32
176.00	166.24	163.56	172.75	184.02	173.40	8.01	62.69
176.57	166.27	163.55	173.11	184.41	173.65	8.16	62.89
177.48	166.31	163.57	173.95	185.37	174.29	8.52	63.21
178.06	166.34	163.61	174.69	186.10	174.79	8.78	63.42
178.48	166.36	163.64	175.22	186.64	175.17	8.99	63.57
178.81	166.38	163.67	175.61	187.05	175.45	9.13	63.69
178.94	166.38	163.72	175.76	187.21	175.57	9.17	63.73
179.07	166.39	164.22	176.26	187.72	176.08	9.18	63.78
179.28	166.40	165.05	177.10	188.57	176.92	9.19	63.86
179.45	166.41	165.74	177.81	189.28	177.62	9.19	63.92
180.18	166.44	168.58	180.69	192.19	180.50	9.22	64.18
181.00	166.48	171.81	183.97	195.50	183.77	9.26	64.47
181.96	166.53	175.58	187.78	199.36	187.59	9.29	DIFR
184.00	166.63	184.55	196.90	208.55	196.68	9.38	DIFR
185.00	166.67	188.93	201.36	213.04	201.13	9.42	DIFR
186.00	166.72	193.32	205.82	217.54	205.57	9.46	DIFR
187.00	166.77	197.71	210.28	222.03	210.02	9.50	DIFR
188.00	166.81	200.61	213.26	225.03	212.98	9.54	SCAT
189.00	166.86	202.40	215.12	226.94	214.84	9.59	SCAT

RUN NO. 49

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HT: SPECIFIED AT 25 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	132.81	132.75	132.90	133.05	132.90	0.12	0.35
5.06	137.20	137.21	137.36	137.51	137.36	0.12	1.80
10.43	142.19	142.31	142.46	142.62	142.47	0.12	3.71
14.34	144.73	144.95	145.10	145.25	145.10	0.12	5.11
20.83	147.83	148.22	148.37	148.52	148.37	0.12	7.42
25.90	149.68	150.20	150.35	150.50	150.35	0.12	9.23
30.85	151.17	151.83	151.98	152.13	151.98	0.12	10.99
35.76	152.44	153.23	153.38	153.53	153.38	0.12	12.74
40.69	153.55	154.48	154.63	154.78	154.63	0.12	14.49
45.80	154.57	155.64	155.79	155.95	155.79	0.12	16.31
50.87	155.48	156.70	156.85	157.01	156.85	0.12	18.12
55.80	156.28	157.64	157.80	157.97	157.80	0.13	19.88
60.89	157.04	158.55	158.72	158.90	158.72	0.14	21.69
65.75	157.70	159.03	159.55	160.10	159.56	0.42	23.42
70.79	158.34	159.35	160.37	161.52	160.41	0.85	25.21
75.63	158.91	159.70	161.13	162.82	161.21	1.22	26.94
80.97	159.50	160.12	161.96	164.23	162.09	1.61	28.84
85.83	160.01	160.42	162.75	165.60	162.91	2.03	30.57
90.93	160.51	160.53	163.54	167.12	163.72	2.50	32.33
95.99	160.98	160.62	164.24	168.46	164.43	3.07	34.19
100.76	161.40	160.74	164.85	169.58	165.04	3.46	35.89
105.90	161.83	161.20	165.82	171.05	166.01	3.85	37.72
110.88	162.23	161.82	166.92	172.64	167.11	4.23	39.49
115.99	162.62	162.46	168.08	174.30	168.27	4.63	41.31
116.68	162.67	161.80	166.73	173.02	167.15	4.39	41.56
117.79	162.75	161.86	166.86	173.25	167.30	4.46	41.95
118.91	162.84	161.93	166.99	173.49	167.44	4.53	42.35
120.04	162.92	161.99	167.12	173.73	167.58	4.60	42.76
121.00	162.99	162.05	167.23	173.92	167.70	4.65	43.10
121.19	163.00	162.06	167.25	173.96	167.72	4.67	43.17
122.36	163.09	162.12	167.38	174.20	167.87	4.73	43.58
123.54	163.17	162.19	167.52	174.45	168.02	4.80	44.00
124.74	163.25	162.25	167.65	174.69	168.16	4.87	44.43
125.95	163.34	162.32	167.79	174.95	168.32	4.95	44.86
126.00	163.34	162.32	167.80	174.96	168.32	4.95	44.88
127.18	163.42	162.38	167.93	175.22	168.47	5.03	45.30
128.43	163.51	162.45	168.08	175.49	168.63	5.11	45.74
129.69	163.59	162.52	168.22	175.76	168.79	5.19	46.19
130.96	163.67	162.58	169.37	176.05	168.96	5.28	46.65
131.00	163.68	162.58	168.37	176.06	168.97	5.28	46.66
132.26	163.76	162.65	168.52	176.35	169.13	5.37	47.11
133.57	163.85	162.71	168.67	176.66	169.30	5.47	47.57
134.89	163.93	162.78	168.83	176.96	169.48	5.56	48.05
136.00	164.00	162.83	168.96	177.21	169.62	5.64	48.44
136.24	164.02	162.84	168.98	177.27	169.65	5.66	48.53
137.60	164.10	162.91	169.14	177.58	169.83	5.75	49.01
138.98	164.19	162.98	169.30	177.89	170.01	5.85	49.50
140.37	164.28	163.05	169.47	178.21	170.19	5.95	50.00
141.00	164.32	163.08	169.54	178.35	170.27	5.99	50.22
141.79	164.36	163.10	169.64	178.53	170.37	6.05	50.50
143.22	164.45	163.13	169.81	178.89	170.56	6.18	51.01
144.67	164.54	163.15	169.98	179.28	170.75	6.33	51.53

146.00	164.62	163.17	170.14	179.62	170.92	6.45	52.00
146.14	164.63	163.17	170.16	179.66	170.94	6.47	52.05
147.62	164.71	163.19	170.34	180.06	171.14	6.62	52.58
149.13	164.80	163.18	170.52	180.51	171.35	6.80	53.12
150.66	164.89	163.21	170.71	1. 2.90	171.55	6.94	53.66
151.00	164.91	163.24	170.75	180.96	171.59	6.95	53.70
152.20	164.98	163.33	170.90	181.15	171.73	6.99	54.21
153.77	165.07	163.44	171.06	181.40	171.92	7.05	54.77
155.35	165.16	163.55	171.20	181.66	172.11	7.10	55.33
156.00	165.19	163.60	171.37	181.77	172.19	7.13	55.56
156.96	165.25	163.66	171.50	181.93	172.31	7.16	55.91
158.59	165.34	163.77	171.70	182.18	172.49	7.21	56.49
160.24	165.43	163.88	171.88	182.44	172.68	7.28	57.08
161.00	165.47	163.93	171.98	182.58	172.77	7.31	57.34
161.92	165.52	163.99	172.12	182.77	172.91	7.36	57.67
163.63	165.61	164.10	172.41	183.14	173.17	7.46	58.28
165.37	165.70	164.17	172.57	183.38	173.32	7.53	58.90
166.00	165.73	164.18	172.57	183.41	173.33	7.53	59.13
166.91	165.78	164.18	172.58	183.46	173.35	7.55	59.45
171.00	165.99	169.43	180.77	191.81	180.68	8.74	60.91
171.28	166.00	169.86	181.34	192.45	181.22	7.82	DIFR
174.00	166.14	176.99	188.69	199.89	188.54	8.94	DIFR
175.00	166.19	179.63	191.40	202.65	191.24	6.99	DIFR
176.00	166.24	182.26	194.11	205.41	193.94	9.04	DIFR
177.00	166.29	184.90	196.81	208.17	196.64	9.09	DIFR
178.00	166.34	187.55	199.52	210.93	199.34	9.13	DIFR
179.00	166.39	190.19	202.23	213.68	202.05	9.18	DIFR
180.00	166.44	192.84	204.94	216.43	204.75	9.22	DIFR

RUN NO. 50

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN DELTA h: 30 FT

CLIMATE: DESERT

SURFACE REFLECTION LOSSING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HIT: SPECIFIED AT 50 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	132.81	132.75	132.90	133.05	132.90	0.12	0.35
6.06	137.20	137.21	137.36	137.51	137.36	0.12	1.80
10.43	142.19	142.31	142.46	142.62	142.47	0.12	3.71
14.34	144.73	144.95	145.10	145.25	145.10	0.12	5.11
20.83	147.83	148.22	148.37	148.52	148.37	0.12	7.42
25.90	149.68	150.20	150.35	150.50	150.35	0.12	9.23
30.85	151.17	151.83	151.98	152.13	151.98	0.12	10.99
35.76	152.44	153.23	153.38	153.53	153.38	0.12	12.74
40.69	153.55	154.48	154.63	154.78	154.63	0.12	14.49
45.80	154.57	155.64	155.79	155.95	155.79	0.12	16.31
50.87	155.48	156.70	156.85	157.01	156.85	0.12	18.12
55.80	156.26	157.64	157.80	157.97	157.80	0.13	19.88
60.89	157.04	158.55	158.72	158.90	158.72	0.14	21.69
65.75	157.70	159.03	159.55	160.10	159.56	0.42	23.42
70.79	158.34	159.35	160.37	161.52	160.41	0.95	25.21
75.83	158.91	159.70	161.13	162.82	161.21	1.22	26.84
80.97	159.50	160.12	161.96	164.23	162.09	1.61	28.84
85.83	160.01	160.42	162.75	165.60	162.91	2.03	30.57
90.93	160.51	160.53	163.54	167.12	163.72	2.58	32.39
95.99	160.98	160.62	164.24	168.46	164.43	3.07	34.19
100.76	161.40	160.74	164.85	169.58	165.04	3.46	35.89
105.90	161.83	161.20	165.82	171.05	166.01	3.85	37.72
110.88	162.23	161.82	166.92	172.64	167.11	4.23	39.49
115.99	162.62	162.46	168.08	174.30	168.27	4.63	41.31
116.68	162.67	161.80	166.73	173.02	167.15	4.39	41.56
117.79	162.75	161.86	166.86	173.25	167.30	4.46	41.95
118.91	162.84	161.93	166.99	173.49	167.44	4.53	42.35
120.04	162.92	161.99	167.12	173.73	167.58	4.60	42.76
121.00	162.99	162.05	167.23	173.92	167.70	4.65	43.10
121.19	163.00	162.06	167.25	173.96	167.72	4.67	43.17
122.36	163.09	162.12	167.38	174.20	167.87	4.73	43.58
123.54	163.17	162.19	167.52	174.45	168.02	4.80	44.00
124.74	163.25	162.25	167.65	174.69	168.16	4.87	44.43
125.95	163.34	162.32	167.79	174.95	168.32	4.95	44.86
126.00	163.34	162.32	167.80	174.96	168.32	4.95	44.88
127.18	163.42	162.38	167.93	175.22	168.47	5.03	45.30
128.43	163.51	162.45	168.08	175.49	168.63	5.11	45.74
129.69	163.59	162.52	168.22	175.76	168.79	5.19	46.19
130.96	163.67	162.58	168.37	176.05	168.96	5.28	46.65
131.00	163.68	162.58	168.37	176.06	168.97	5.28	46.66
132.26	163.76	162.65	168.52	176.35	169.13	5.37	47.11
133.57	163.85	162.71	168.67	176.66	169.30	5.47	47.57
134.89	163.93	162.78	168.83	176.96	169.48	5.56	48.05
136.00	164.00	162.83	168.96	177.21	169.62	5.64	48.44
136.24	164.02	162.84	168.98	177.27	169.65	5.66	48.53
137.09	164.07	162.89	169.08	177.46	169.76	5.72	48.83
137.80	164.10	162.99	169.56	177.99	170.14	5.88	49.01
138.98	164.19	163.24	170.85	179.43	171.15	6.33	49.50
140.37	164.28	163.93	172.15	180.09	172.31	6.63	50.00
141.00	164.32	164.44	172.74	181.54	172.90	6.68	50.22
144.42	164.52	167.17	175.96	185.02	176.04	6.97	DIFR
147.00	164.68	169.14	178.12	187.31	178.18	7.10	DIFR

148.00	164.74	169.86	178.96	186.19	179.00	7.16	DIFR
149.00	164.73	170.59	179.81	189.08	179.83	7.22	DIFR
150.00	164.85	171.33	180.65	189.97	180.65	7.28	DIFR
151.00	164.91	172.08	181.49	190.86	181.48	7.34	DIFR
152.00	164.97	172.83	182.34	191.77	182.31	7.40	DIFR
153.00	165.02	173.56	183.18	192.71	183.15	7.48	DIFR
154.00	165.08	174.31	184.03	193.64	184.00	7.55	DIFR
155.00	165.14	175.06	184.87	194.58	184.84	7.63	DIFR
156.00	165.19	175.81	185.72	195.51	185.68	7.70	DIFR
157.00	165.25	176.57	186.57	196.44	186.53	7.76	DIFR
158.00	165.30	177.28	187.41	197.38	187.36	7.85	DIFR
159.00	165.36	178.00	188.26	198.31	188.19	7.93	DIFR
160.00	165.41	178.73	189.11	199.26	189.04	8.02	DIFR
161.00	165.47	179.46	189.96	200.21	189.88	8.11	DIFR
162.00	165.52	180.21	190.81	201.17	190.73	8.19	DIFR
163.00	165.57	180.96	191.66	202.10	191.58	8.26	DIFR
164.00	165.63	181.72	192.51	203.03	192.43	8.33	DIFR
165.00	165.68	182.49	193.36	203.96	193.27	8.39	DIFR
166.00	165.73	183.26	194.21	204.88	194.12	8.45	DIFR

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 3000 FT ABOVE MSL TYPE ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.4 NMI  
 TERRAIN DELTA h: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN

RUN NO. 51  
 FREQUENCY: 2 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: DETERMINED AT 0 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	118.66	118.52	118.68	118.85	118.69	0.13	0.29
5.67	121.72	120.73	121.75	122.91	121.80	0.85	1.64
9.37	124.52	122.73	124.57	126.90	124.72	1.63	2.71
15.27	128.02	125.42	128.09	131.92	128.45	2.55	4.42
18.75	129.64	126.75	129.72	134.18	130.19	2.93	5.43
24.04	131.67	128.47	131.78	136.95	132.36	3.34	6.96
30.74	133.72	130.30	133.86	139.62	134.55	3.68	8.90
35.94	135.04	131.54	135.20	141.27	135.95	3.84	10.40
38.95	135.72	131.14	131.29	131.44	131.29	0.12	11.27
39.86	135.92	134.19	134.34	134.50	134.34	0.12	11.53
40.80	136.12	147.00	147.15	147.30	147.15	0.12	11.81
41.00	136.16	144.22	144.37	144.52	144.37	0.12	11.87
41.78	136.32	134.56	134.71	134.86	134.71	0.12	12.09
42.81	136.53	131.85	132.00	132.15	132.00	0.12	12.39
43.89	136.74	134.94	135.09	135.25	135.09	0.12	12.70
45.03	136.96	148.61	148.76	148.91	148.76	0.12	13.03
46.00	137.14	136.66	136.81	136.96	136.81	0.12	13.31
46.21	137.19	135.34	135.49	135.65	135.49	0.12	13.37
47.46	137.41	132.63	132.78	132.94	132.78	0.12	13.74
48.78	137.65	135.77	135.92	136.07	135.92	0.12	14.12
50.16	137.89	150.41	150.56	150.71	150.56	0.12	14.52
50.99	138.03	140.04	140.19	140.35	140.19	0.12	14.76
51.62	138.13	136.22	136.37	136.52	136.37	0.12	14.94
52.15	138.39	133.51	133.66	133.82	133.66	0.12	15.38
54.78	138.65	136.69	136.84	137.00	136.84	0.12	15.85
56.00	138.83	145.89	146.04	146.20	146.04	0.12	16.21
56.50	138.91	152.45	152.60	152.76	152.60	0.12	16.35
58.33	139.18	137.19	137.35	137.50	137.35	0.12	16.68
60.26	139.47	134.50	134.65	134.81	134.65	0.12	17.44
60.99	139.57	134.94	135.10	135.25	135.10	0.12	17.65
62.32	139.75	137.73	137.88	138.04	137.88	0.12	18.07
64.50	140.05	154.79	154.94	155.10	154.95	0.12	18.67
65.98	140.25	141.41	141.56	141.72	141.56	0.12	19.10
66.83	140.36	138.30	138.45	138.61	138.46	0.12	19.34
69.32	140.67	135.63	135.78	135.95	135.79	0.12	20.06
70.98	140.88	136.92	137.08	137.24	137.08	0.13	20.54
71.98	141.00	138.91	139.07	139.23	139.07	0.13	20.83
74.83	141.33	157.52	157.68	157.85	157.68	0.13	21.66
75.98	141.47	146.55	146.71	146.88	146.71	0.13	21.99
77.88	141.68	139.56	139.72	139.90	139.73	0.13	22.54
80.99	142.02	136.91	137.08	137.26	137.08	0.14	23.44
81.16	142.04	136.92	137.09	137.27	137.09	0.14	23.49
84.68	142.40	140.25	140.43	140.62	140.44	0.15	24.51
85.97	142.53	143.49	143.68	143.88	143.68	0.15	24.88
88.48	142.78	160.76	160.96	161.16	160.96	0.16	25.61
90.96	143.02	144.44	144.66	144.88	144.66	0.17	26.33
92.58	143.18	140.97	141.20	141.43	141.20	0.18	26.79
95.99	143.49	138.40	138.66	139.92	138.66	0.20	27.78
97.01	143.58	138.34	138.61	138.89	138.62	0.21	28.08
100.97	143.93	140.64	140.97	141.31	140.97	0.26	29.22
101.79	144.00	141.68	142.04	142.39	142.04	0.28	29.46
105.97	144.34	155.00	155.48	155.95	155.47	0.37	30.67
106.98	144.43	164.52	165.04	165.55	165.03	0.40	30.96

111.00	144.75	144.45	145.21	145.95	145.21	0.59	32.12
112.60	144.87	142.08	143.00	143.87	142.98	0.70	32.59
115.94	145.12	139.69	140.84	142.11	140.88	0.95	33.55
118.70	145.33	139.91	140.56	142.25	140.89	0.95	34.35
121.00	145.49	140.11	141.11	143.15	141.4^	1.21	35.02
125.31	145.80	141.28	144.11	146.69	144.03	2.12	36.27
125.99	145.84	141.96	144.88	147.53	144.80	2.18	36.46
130.98	146.18	153.75	157.23	160.30	157.10	2.56	37.91
132.49	146.28	166.84	170.46	173.65	170.32	2.66	38.35
135.92	146.50	147.07	151.00	154.46	150.85	2.89	39.34
140.29	146.78	141.27	145.10	148.88	145.08	2.98	40.60
141.00	146.82	141.29	144.58	148.42	144.75	2.79	40.81
145.94	147.12	141.28	142.71	146.92	143.58	2.30	42.24
148.74	147.28	141.21	142.59	147.01	143.54	2.38	43.05
150.99	147.41	141.28	142.89	147.48	143.82	2.52	43.70
155.96	147.70	141.68	144.81	149.80	145.39	3.20	45.14
157.90	147.80	141.84	146.11	151.27	146.39	3.69	45.70
160.92	147.97	142.64	149.05	154.47	148.74	4.63	46.57
165.94	148.23	153.44	160.33	166.17	160.00	4.98	48.02
167.81	148.33	170.26	177.31	183.29	176.98	5.10	48.57
170.92	148.49	149.11	156.47	162.69	156.11	5.31	49.47
175.92	148.74	142.52	149.06	155.63	149.07	5.12	50.91
178.52	148.87	142.41	147.26	154.06	147.87	4.58	51.67
181.00	148.99	142.25	146.13	153.15	147.11	4.32	52.38
186.00	149.22	141.89	145.00	152.41	146.34	4.23	53.83
190.08	149.41	141.83	144.92	152.64	146.37	4.36	55.01
191.00	149.45	141.87	144.99	152.77	146.45	4.40	55.28
196.00	149.68	142.36	145.94	154.06	147.36	4.70	56.73
198.33	149.78	142.69	146.72	155.04	148.06	4.93	57.40
201.00	149.90	143.10	147.90	156.46	149.07	5.29	58.17
202.65	149.97	143.36	148.82	157.51	149.83	5.58	58.65
205.33	150.08	143.80	150.68	159.58	151.31	6.18	59.43
206.00	150.11	143.91	151.23	160.18	151.74	6.37	59.62
207.17	150.16	144.12	152.28	161.32	152.56	6.72	59.96
208.52	150.21	144.38	153.65	162.79	153.61	7.19	60.35
209.56	150.26	144.60	154.82	164.03	154.50	7.60	60.65
210.39	150.29	145.00	155.80	165.08	155.33	7.85	60.89
211.00	150.32	145.68	156.55	165.86	156.06	7.89	61.07
211.06	150.32	145.76	156.63	165.95	156.15	7.90	61.09
213.54	150.42	147.99	159.07	168.57	158.58	8.05	61.80
213.63	150.43	148.16	159.25	168.75	158.75	8.05	61.84
215.94	150.52	150.86	162.20	171.94	161.70	8.24	62.50
220.84	150.71	156.98	168.58	178.55	168.07	8.43	DIFR
223.00	150.80	161.74	173.45	183.50	172.93	8.51	DIFR
224.00	150.84	163.94	175.70	185.78	175.18	8.54	DIFR
225.00	150.87	166.15	177.95	188.07	177.42	8.57	DIFR
226.00	150.91	168.33	180.20	190.35	179.66	8.61	DIFR
227.00	150.95	170.51	182.45	192.64	181.90	8.65	DIFR
228.00	150.99	172.69	184.70	194.92	184.14	8.69	DIFR
2.29E+02	1.51E+02	1.75E+02	1.87E+02	1.97E+02	1.86E+02	8.73E+00	DIFR



RUN NO. 52

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN

FREQUENCY: 2 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: DETERMINED 4 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 260 N-UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1 00	118 66	118 53	118 68	118 84	118 68	0 12	0 29
5 67	121 72	121 60	121 75	121 91	121 75	0 12	1 64
9 37	124 52	124 42	124 57	124 72	124 57	0 12	2 71
15 27	128 02	127 94	128 09	128 25	128 09	0 12	4 42
18 75	129 64	129 57	129 72	129 88	129 73	0 12	5 43
24 04	131 67	131 63	131 78	131 93	131 78	0 12	6 96
30 74	133 72	133 71	133 86	134 01	133 86	0 12	8 90
35 94	135 04	135 06	135 20	135 36	135 21	0 12	10 40
38 95	135 72	135 75	135 90	136 06	135 91	0 12	11 27
39 86	135 92	135 95	136 10	136 26	136 11	0 12	11 53
40 80	136 12	136 16	136 31	136 46	136 31	0 12	11 81
41 00	136 16	136 20	136 35	136 51	136 35	0 12	11 87
41 78	136 32	136 37	136 52	136 67	136 52	0 12	12 09
42 81	136 53	136 58	136 73	136 88	136 73	0 12	12 39
43 89	136 74	136 80	136 95	137 10	136 95	0 12	12 70
45 03	136 96	137 02	137 17	137 33	137 17	0 12	13 03
46 00	137 14	137 21	137 36	137 51	137 36	0 12	13 31
46 21	137 19	137 25	137 40	137 56	137 40	0 12	13 37
47 46	137 41	137 49	137 64	137 79	137 64	0 12	13 74
48 78	137 65	137 73	137 88	138 03	137 88	0 12	14 12
50 16	137 89	137 97	138 12	138 28	138 13	0 12	14 52
50 99	138 03	138 12	138 27	138 43	138 27	0 12	14 76
51 62	138 13	138 23	138 38	138 53	138 38	0 12	14 94
53 15	138 39	138 49	138 64	138 79	138 64	0 12	15 38
54 78	138 65	138 76	138 91	139 06	138 91	0 12	15 85
56 00	138 83	138 95	139 10	139 26	139 10	0 12	16 21
56 50	138 91	139 03	139 18	139 34	139 18	0 12	16 35
58 33	139 18	139 32	139 47	139 62	139 47	0 12	16 88
60 26	139 47	139 61	139 76	139 92	139 76	0 12	17 44
60 99	139 57	139 71	139 87	140 02	139 87	0 12	17 65
62 32	139 75	139 91	140 05	140 22	140 06	0 12	18 04
64 50	140 05	140 22	140 37	140 53	140 37	0 12	18 67
65 98	140 25	140 42	140 57	140 73	140 58	0 12	19 10
66 83	140 36	140 54	140 69	140 85	140 69	0 12	19 34
69 32	140 67	140 86	141 02	141 18	141 02	0 12	20 06
70 98	140 88	141 08	141 23	141 40	141 24	0 13	20 54
71 98	141 00	141 20	141 36	141 53	141 36	0 13	20 83
74 83	141 33	141 55	141 71	141 88	141 72	0 13	21 66
75 98	141 47	141 69	141 85	142 02	141 86	0 13	21 99
77 88	141 68	141 91	142 08	142 25	142 08	0 13	22 54
80 99	142 02	142 26	142 44	142 62	142 44	0 14	23 44
81 16	142 04	142 28	142 46	142 64	142 46	0 14	23 49
84 68	142 40	142 65	142 85	143 05	142 85	0 15	24 51
85 97	142 53	142 79	142 99	143 19	142 99	0 16	24 88
88 48	142 78	143 04	143 26	143 48	143 26	0 17	25 61
90 96	143 02	143 28	143 51	143 76	143 52	0 18	26 33
92 58	143 18	143 43	143 68	143 93	143 68	0 20	26 79
95 99	143 49	143 73	144 02	144 31	144 02	0 23	27 78
97 01	143 58	143 82	144 12	144 43	144 12	0 24	28 08
100 97	143 93	144 13	144 50	144 88	144 50	0 29	29 22
101 79	144 00	144 19	144 58	144 98	144 58	0 31	29 46
105 97	144 34	144 47	144 96	145 50	144 98	0 40	30 67
106 98	144 43	144 53	145 08	145 63	145 08	0 43	30 96

111 00	144 75	144 80	145 46	146 24	145 50	0 56	32 12
112 60	144 87	144 94	145 61	146 52	145 68	0 62	32 59
115 94	145 12	145 23	145 92	147 22	146 11	0 79	37 55
118 70	145 33	145 47	146 18	147 90	146 49	0 98	34 35
121 00	145 49	145 65	146 39	148 46	146 81	1 14	35 02
125 31	145 80	145 96	146 79	149 40	147 34	1 41	36 27
125 99	145 84	146 01	146 85	149 53	147 42	1 44	36 46
130 98	146 18	146 31	147 26	150 39	147 95	1 7	37 91
132 49	146 28	146 39	147 40	150 64	148 10	1 4	38 35
135 92	146 50	146 54	147 64	151 14	148 39	1 38	39 34
140 29	146 78	146 54	147 84	151 68	148 66	2 07	40 60
141 00	146 82	146 64	147 86	151 76	148 70	2 10	40 81
145 94	147 12	146 58	148 00	152 31	148 90	2 34	42 24
148 74	147 28	146 53	148 11	152 64	149 03	2 48	43 05
150 99	147 41	146 51	148 23	152 94	149 16	2 61	43 70
155 96	147 70	146 53	148 66	153 81	149 60	2 93	45 14
157 90	147 80	146 56	148 91	154 25	149 84	3 09	45 70
160 92	147 97	146 62	149 36	155 00	150 27	3 34	46 57
165 94	148 23	146 72	150 15	156 28	150 99	3 79	48 02
157 81	148 33	146 72	150 39	156 70	151 21	3 95	48 57
170 92	148 49	146 67	150 61	157 21	151 44	4 16	49 47
175 92	148 74	146 41	150 36	157 44	151 34	4 37	50 91
178 52	148 87	146 17	149 99	157 36	151 10	4 45	51 67
181 00	148 99	145 87	149 57	157 21	150 80	4 53	52 38
186 00	149 22	145 22	148 81	156 95	150 23	4 70	53 83
190 08	149 41	144 81	148 48	157 00	149 99	4 89	55 01
191 00	149 45	144 75	148 46	157 06	149 98	4 94	55 28
196 00	149 68	144 67	148 75	157 76	150 29	5 24	56 73
198 33	149 78	144 75	149 15	158 39	150 66	5 45	57 40
201 00	149 90	144 90	149 89	159 34	151 28	5 74	58 17
202 85	149 97	145 00	150 51	160 06	151 77	5 98	58 65
205 33	150 08	145 18	151 83	161 51	152 78	6 42	59 43
206 00	150 11	145 24	152 23	161 91	153 07	6 54	59 62
207 17	150 16	145 35	153 00	162 63	153 62	6 77	59 96
208 52	150 21	145 47	154 00	163 60	154 34	7 09	60 35
209 56	150 26	145 58	154 84	164 43	154 94	7 36	60 65
210 39	150 29	145 67	155 55	165 12	155 45	7 60	60 89
211 00	150 32	145 74	156 06	165 64	155 83	7 77	61 07
211 06	150 32	145 75	156 12	165 70	155 87	7 79	61 09
213 05	150 40	146 49	157 57	167 17	157 11	8 09	61 66
213 68	150 43	147 38	158 50	168 12	158 03	8 11	61 84
215 94	150 52	150 54	161 88	171 67	161 40	8 26	62 50
220 25	150 69	156 74	168 33	178 31	167 83	8 43	DIFR
223 00	150 80	162 87	174 59	184 68	174 08	8 53	DIFR
224 00	150 84	165 10	176 87	187 01	176 36	8 56	DIFR
225 00	150 87	167 34	179 15	189 31	178 63	8 59	DIFR
226 00	150 91	169 55	181 43	191 62	180 90	8 63	DIFR
227 00	150 95	171 76	183 70	193 93	183 17	8 67	DIFR
228 00	150 99	173 97	185 98	196 24	185 44	8 71	DIFR

RUN NO. 53

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 2 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: SPECIFIED AT 25 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFP DIST (NMI)
1.00	118.66	118.53	118.68	118.84	118.68	0.12	0.29
5.67	121.72	121.60	121.75	121.91	121.75	0.12	1.64
9.37	124.52	124.42	124.57	124.72	124.57	0.12	2.71
15.27	128.02	127.94	128.09	128.25	128.09	0.12	4.42
18.75	129.64	129.57	129.72	129.88	129.73	0.12	5.43
24.04	131.67	131.63	131.78	131.93	131.78	0.12	6.96
30.74	133.72	133.71	133.86	134.01	133.86	0.12	8.90
35.94	135.04	135.06	135.20	135.36	135.21	0.12	10.40
38.95	135.72	135.75	135.90	136.06	135.91	0.12	11.27
39.86	135.92	135.95	136.10	136.26	136.11	0.12	11.53
40.80	136.12	136.16	136.31	136.46	136.31	0.12	11.81
41.00	136.16	136.20	136.35	136.51	136.35	0.12	11.87
41.78	136.32	136.37	136.52	136.67	136.52	0.12	12.09
42.81	136.53	136.58	136.73	136.88	136.73	0.12	12.39
43.89	136.74	136.80	136.95	137.10	136.95	0.12	12.70
45.03	136.96	137.02	137.17	137.33	137.17	0.12	13.03
46.00	137.14	137.21	137.36	137.51	137.36	0.12	13.31
46.21	137.19	137.25	137.40	137.56	137.40	0.12	13.37
47.46	137.41	137.49	137.64	137.79	137.64	0.12	13.74
48.78	137.65	137.73	137.88	138.03	137.88	0.12	14.12
50.16	137.89	137.97	138.12	138.28	138.13	0.12	14.52
50.99	138.03	138.12	138.27	138.43	138.27	0.12	14.76
51.62	138.13	138.23	138.38	138.53	138.38	0.12	14.94
53.15	138.39	138.49	138.64	138.79	138.64	0.12	15.38
54.78	138.65	138.76	138.91	139.06	138.91	0.12	15.85
56.00	138.83	138.95	139.10	139.26	139.10	0.12	16.21
56.50	138.81	139.03	139.18	139.34	139.18	0.12	16.35
58.33	139.18	139.32	139.47	139.62	139.47	0.12	16.88
60.26	139.47	139.61	139.76	139.92	139.76	0.12	17.44
60.99	139.57	139.71	139.87	140.02	139.87	0.12	17.65
62.32	139.75	139.91	140.06	140.22	140.06	0.12	18.04
64.50	140.05	140.22	140.37	140.53	140.37	0.12	18.67
65.98	140.25	140.42	140.57	140.73	140.58	0.12	19.10
66.83	140.36	140.54	140.69	140.85	140.69	0.12	19.34
69.32	140.67	140.86	141.02	141.18	141.02	0.12	20.06
70.98	140.88	141.08	141.23	141.40	141.24	0.13	20.54
71.98	141.00	141.20	141.36	141.53	141.36	0.13	20.83
74.83	141.33	141.55	141.71	141.88	141.72	0.13	21.66
75.98	141.47	141.69	141.95	142.02	141.86	0.13	21.99
77.88	141.68	141.91	142.08	142.25	142.08	0.13	22.54
80.99	142.02	142.26	142.44	142.62	142.44	0.14	23.44
81.16	142.04	142.28	142.46	142.64	142.46	0.14	23.49
84.68	142.40	142.66	142.85	143.05	142.85	0.15	24.51
85.97	142.53	142.79	142.99	143.19	142.99	0.16	24.88
88.48	142.78	143.04	143.26	143.48	143.26	0.17	25.61
90.96	143.02	143.28	143.51	143.76	143.52	0.18	26.33
92.58	143.18	143.43	143.68	143.93	143.68	0.20	26.79
95.99	143.49	143.73	144.02	144.31	144.02	0.23	27.78
97.01	143.58	143.82	144.12	144.43	144.12	0.24	28.08
100.97	143.93	144.13	144.50	144.88	144.50	0.29	29.22
101.79	144.00	144.19	144.58	144.98	144.58	0.31	29.46
105.97	144.34	144.47	144.98	145.50	144.98	0.40	30.67
106.98	144.43	144.53	145.08	145.63	145.08	0.43	30.96

111.00	144.75	144.80	145.46	146.24	145.50	0.56	32.12
112.60	144.87	144.94	145.61	146.52	145.68	0.62	32.59
115.94	145.12	145.23	145.92	147.22	146.11	0.79	33.55
118.70	145.33	145.47	146.18	147.90	146.49	0.98	34.35
121.00	145.49	145.65	146.39	148.46	146.81	1.14	35.02
125.31	145.80	145.96	146.79	149.40	147.34	1.41	36.27
125.99	145.84	146.01	146.85	149.53	147.42	1.44	36.46
130.98	146.10	146.31	147.28	150.39	147.95	1.67	37.91
132.49	146.28	146.39	147.40	150.64	148.10	1.74	38.35
135.92	146.50	146.54	147.64	151.14	148.39	1.89	39.34
140.29	146.78	146.64	147.84	151.66	148.66	2.07	40.60
141.00	146.82	146.64	147.86	151.76	148.70	2.10	40.81
145.94	147.12	146.58	148.00	152.31	148.90	2.34	42.24
148.74	147.28	146.53	148.11	152.64	149.03	2.48	43.06
150.99	147.41	146.51	148.23	152.94	149.16	2.61	43.70
155.96	147.70	146.53	148.66	153.81	149.60	2.93	45.14
157.90	147.80	146.56	148.91	154.25	149.84	3.09	45.70
160.92	147.97	146.62	149.36	155.00	150.27	3.34	46.57
165.94	148.23	146.72	150.15	156.28	150.99	3.79	48.02
167.81	148.33	146.72	150.39	156.70	151.21	3.95	48.57
170.92	148.49	146.67	150.61	157.21	151.44	4.16	49.47
175.92	148.74	146.41	150.36	157.44	151.34	4.37	50.91
178.52	148.87	146.17	149.99	157.36	151.10	4.45	51.67
181.00	148.99	145.87	149.57	157.21	150.80	4.53	52.38
186.00	149.22	145.22	148.81	156.95	150.23	4.70	53.83
190.08	149.41	144.81	148.48	157.00	149.99	4.89	55.01
191.00	149.45	144.75	148.46	157.06	149.98	4.94	55.28
196.00	149.68	144.67	148.75	157.76	150.29	5.24	56.73
198.33	149.78	144.75	149.15	158.39	150.66	5.45	57.40
201.00	149.90	144.90	149.89	159.34	151.28	5.74	58.17
202.65	149.97	145.00	150.51	160.05	151.77	5.96	58.85
205.33	150.08	145.18	151.83	161.51	152.78	6.42	59.43
206.00	150.11	145.24	152.23	161.91	153.07	6.54	59.82
207.17	150.16	145.35	153.00	162.63	153.62	6.77	59.96
207.17	150.16	145.35	153.00	162.63	153.62	6.77	59.96
208.52	150.21	147.80	158.54	168.14	158.18	7.95	60.35
209.56	150.26	151.99	162.81	172.39	162.43	7.97	60.65
209.57	150.28	151.90	162.83	172.49	162.43	8.05	DIFR
212.00	150.36	157.31	168.42	178.15	167.99	8.15	DIFR
213.00	150.40	159.53	170.71	180.47	170.27	8.19	DIFR
214.00	150.44	181.76	173.01	182.80	172.56	8.22	DIFR
215.00	150.48	184.00	175.31	185.14	174.85	8.27	DIFR
216.00	150.52	186.23	177.60	187.49	177.14	8.31	DIFR
217.00	150.56	188.47	179.90	189.83	179.43	8.35	DIFR

RUN NO. 54

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN

FREQUENCY: 2 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: SPECIFIED AT 50 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	118.66	118.53	118.68	118.84	118.68	0.12	0.29
5.67	121.72	121.60	121.75	121.91	121.75	0.12	1.64
9.37	124.52	124.42	124.57	124.72	124.57	0.12	2.71
15.27	128.02	127.94	128.09	128.25	128.09	0.12	4.42
18.75	129.64	129.57	129.72	129.88	129.73	0.12	5.43
24.04	131.67	131.63	131.78	131.93	131.78	0.12	6.96
30.74	133.72	133.71	133.86	134.01	133.86	0.12	8.90
35.94	135.04	135.06	135.20	135.36	135.21	0.12	10.40
38.95	135.72	135.75	135.90	136.06	135.91	0.12	11.27
39.86	135.92	135.95	135.10	136.26	136.11	0.12	11.53
40.80	136.12	136.16	136.31	136.46	136.31	0.12	11.81
41.00	136.16	136.20	136.35	136.51	136.35	0.12	11.87
41.78	136.32	136.37	136.52	136.67	136.52	0.12	12.09
42.81	136.53	136.58	136.73	136.88	136.73	0.12	12.39
43.89	136.74	136.80	136.95	137.10	136.95	0.12	12.70
45.03	136.96	137.02	137.17	137.33	137.17	0.12	13.03
46.00	137.14	137.21	137.36	137.51	137.36	0.12	13.31
46.21	137.19	137.25	137.40	137.56	137.40	0.12	13.37
47.48	137.41	137.49	137.64	137.79	137.64	0.12	13.74
48.70	137.65	137.73	137.88	138.03	137.88	0.12	14.12
50.16	137.89	137.97	138.12	138.28	138.13	0.12	14.52
50.99	138.03	138.12	138.27	138.43	138.27	0.12	14.76
51.62	138.13	138.23	138.38	138.53	138.38	0.12	14.94
53.15	138.39	138.49	138.64	138.79	138.64	0.12	15.38
54.78	138.65	138.76	138.91	139.06	138.91	0.12	15.85
56.00	138.83	138.95	139.10	139.26	139.10	0.12	16.21
56.50	138.91	139.03	139.18	139.34	139.18	0.12	16.35
58.33	139.18	139.32	139.47	139.62	139.47	0.12	16.88
60.26	139.47	139.61	139.76	139.92	139.76	0.12	17.44
60.99	139.57	139.71	139.87	140.02	139.87	0.12	17.65
62.32	139.75	139.91	140.06	140.22	140.06	0.12	18.04
64.50	140.05	140.22	140.37	140.53	140.37	0.12	18.67
65.98	140.25	140.42	140.57	140.73	140.58	0.12	19.10
68.83	140.36	140.54	140.69	140.85	140.69	0.12	19.34
69.32	140.67	140.85	141.02	141.16	141.02	0.12	20.06
70.98	140.88	141.08	141.23	141.40	141.24	0.13	20.54
71.98	141.00	141.20	141.36	141.53	141.36	0.13	20.83
74.83	141.33	141.55	141.71	141.88	141.72	0.13	21.66
75.98	141.47	141.69	141.85	142.02	141.86	0.13	21.99
77.88	141.68	141.91	142.08	142.25	142.08	0.13	22.54
80.99	142.02	142.26	142.44	142.62	142.44	0.14	23.44
81.16	142.04	142.28	142.46	142.64	142.46	0.14	23.49
84.68	142.40	142.66	142.85	143.05	142.85	0.15	24.51
85.97	142.53	142.79	142.99	143.19	142.99	0.16	24.88
88.48	142.78	143.04	143.26	143.48	143.26	0.17	25.61
90.96	143.02	143.28	143.51	143.76	143.52	0.18	26.33
92.58	143.18	143.43	143.68	143.93	143.68	0.20	26.79
95.99	143.49	143.73	144.02	144.31	144.02	0.23	27.78
97.01	143.58	143.82	144.12	144.43	144.12	0.24	28.08
100.97	143.93	144.13	144.50	144.88	144.50	0.29	29.22
101.79	144.00	144.19	144.58	144.98	144.58	0.31	29.46
105.97	144.34	144.47	144.98	145.50	144.98	0.40	30.67
106.98	144.43	144.53	145.08	145.63	145.08	0.43	30.96

111.00	144.75	144.80	145.46	146.24	145.50	0.56	32.12
112.00	144.87	144.94	145.61	146.52	145.68	0.62	32.59
115.94	145.12	145.23	145.92	147.22	146.11	0.79	33.55
116.70	145.33	145.47	146.18	147.90	146.49	0.88	34.35
121.00	145.49	145.65	146.39	148.46	146.81	1.14	35.02
125.31	145.80	145.98	146.79	149.40	147.34	1.41	36.27
125.99	145.84	146.01	146.85	149.53	147.42	1.44	36.46
130.98	146.16	146.31	147.28	150.39	147.95	1.67	37.91
137.49	146.28	146.39	147.40	150.84	148.10	1.74	38.35
135.92	146.50	146.54	147.64	151.14	148.30	1.88	39.34
140.29	146.78	146.84	147.84	151.68	148.68	2.07	40.60
141.00	146.82	146.84	147.86	151.78	148.70	2.10	40.81
145.94	147.12	146.58	148.00	152.31	148.90	2.34	42.24
148.74	147.28	146.53	148.11	152.64	149.03	2.48	43.05
150.99	147.41	146.51	148.23	152.94	149.16	2.61	43.70
155.86	147.70	146.53	148.66	153.81	149.80	2.93	45.14
157.90	147.80	146.56	148.91	154.25	149.84	3.09	45.70
160.92	147.97	146.62	149.38	155.00	150.27	3.34	46.57
163.99	148.13	146.69	149.85	155.79	150.72	3.61	47.46
165.94	148.23	146.87	150.84	156.97	151.51	3.98	48.02
167	148.33	146.88	151.82	158.13	152.28	4.37	48.57
	148.49	147.09	153.48	160.06	153.54	5.07	49.47
	148.74	148.09	156.10	163.18	155.81	5.90	50.81
	148.87	149.23	157.47	164.83	157.19	6.10	51.67
	148.99	150.33	158.77	166.11	158.52	6.29	52.38
172.18	149.04	150.61	159.38	167.22	159.09	6.49	DIFR
185.00	149.18	152.65	161.67	169.82	161.34	6.64	DIFR
186.00	149.22	153.37	162.47	170.47	162.13	6.68	DIFR
187.00	149.27	154.10	163.28	171.31	162.92	6.73	DIFR
188.00	149.32	154.83	164.08	172.16	163.72	6.77	DIFR
189.00	149.36	155.57	164.89	173.00	164.51	6.82	DIFR
190.00	149.41	156.31	165.69	173.84	165.31	6.86	DIFR
191.00	149.45	157.05	166.50	174.68	166.10	6.89	DIFR
192.00	149.50	157.79	167.30	175.52	166.90	6.93	DIFR
193.00	149.54	158.54	168.11	176.36	167.70	6.97	DIFR
194.00	149.59	159.28	168.91	177.20	168.49	7.01	DIFR
195.00	149.63	159.97	169.72	178.04	169.27	7.06	DIFR
196.00	149.68	160.69	170.52	178.88	170.06	7.11	DIFR
197.00	149.72	161.40	171.33	179.78	170.87	7.19	DIFR
198.00	149.77	162.11	172.13	180.70	171.68	7.27	DIFR

RUN NO. 55

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC FREQUENCY: 2 GHz  
 FACILITY ANTENNA HEIGHT: 3 FT ABOVE MSL TYPE: ISOTROPIC POLARIZATION: CIRCULAR  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI TERRAIN ELEVATION AT SITE: 0 FT  
 TERRAIN DELTA: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI OBST HT: DETERMINED AT 0 FT ABOVE MSL  
 CLIMATE: DESERT MINIMUM MONTHLY MEAN: 280 N UNITS SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOSS: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	110.66	118.52	118.69	118.86	118.69	0.13	0.29
3.16	119.79	119.23	119.38	119.53	119.38	0.12	0.93
3.44	119.99	119.85	120.00	120.16	120.00	0.12	1.01
3.72	120.20	120.70	120.85	121.00	120.85	0.12	1.09
4.00	120.41	120.26	120.41	120.56	120.41	0.12	1.18
4.28	120.62	119.77	119.92	120.08	119.92	0.12	1.26
4.57	120.85	120.69	120.84	120.99	120.84	0.12	1.34
4.86	121.08	121.95	122.10	122.25	122.10	0.12	1.43
5.15	121.31	121.13	121.28	121.44	121.28	0.12	1.51
5.46	121.55	120.38	120.53	120.68	120.53	0.12	1.60
5.77	121.80	121.60	121.75	121.91	121.75	0.12	1.69
6.00	121.99	123.10	123.25	123.41	123.25	0.12	1.78
6.09	122.06	123.38	123.53	123.69	123.53	0.12	1.79
6.43	122.33	122.10	122.25	122.40	122.25	0.12	1.89
6.78	122.60	121.07	121.22	121.38	121.22	0.12	1.99
7.14	122.89	122.62	122.77	122.92	122.77	0.12	2.10
7.53	123.18	125.05	125.20	125.35	125.20	0.12	2.21
7.94	123.49	123.10	123.33	123.48	123.33	0.12	2.33
8.37	123.81	121.88	122.03	122.19	122.03	0.12	2.46
8.82	124.14	123.77	123.92	124.08	123.92	0.12	2.59
9.31	124.48	127.03	127.18	127.34	127.18	0.12	2.73
9.84	124.84	124.41	124.56	124.72	124.56	0.12	2.89
10.40	125.22	122.86	123.01	123.16	123.01	0.12	3.05
11.00	125.60	125.03	125.18	125.33	125.18	0.12	3.23
11.61	125.61	125.10	125.25	125.41	125.25	0.12	3.23
11.67	126.02	129.46	129.60	129.76	129.60	0.12	3.43
12.40	126.46	126.86	126.01	126.16	126.01	0.12	3.64
13.20	126.92	124.08	124.23	124.38	124.23	0.12	3.88
14.08	127.40	126.69	126.84	127.00	126.84	0.12	4.13
15.06	127.92	132.52	132.67	132.82	132.67	0.12	4.42
15.99	128.38	128.38	128.53	128.68	128.53	0.12	4.70
16.17	128.47	127.62	127.77	127.93	127.77	0.12	4.75
17.42	129.05	125.67	125.82	125.97	125.82	0.12	5.12
18.85	129.68	128.68	128.83	128.99	128.83	0.12	5.53
20.50	130.36	136.62	136.77	136.92	136.77	0.12	6.02
20.97	130.54	135.55	135.69	135.85	135.70	0.12	6.16
22.43	131.09	129.82	130.07	130.22	130.07	0.12	6.59
24.73	131.90	127.91	128.06	128.22	128.07	0.12	7.26
25.93	132.29	128.77	128.92	129.08	128.93	0.12	7.62
27.49	132.78	131.40	131.55	131.70	131.55	0.12	8.07
30.90	133.76	142.63	142.78	142.93	142.78	0.12	9.08
30.99	133.79	142.64	142.79	142.95	142.80	0.12	9.10
35.21	134.86	133.24	133.39	133.55	133.40	0.12	10.34
35.99	135.05	132.52	132.60	132.82	132.67	0.12	10.57
40.80	136.12	131.48	131.63	131.79	131.63	0.12	11.98
41.00	136.16	131.52	131.67	131.83	131.67	0.12	12.04
45.84	137.12	133.73	133.88	134.04	133.88	0.12	13.46
48.33	137.57	135.70	135.86	136.00	135.85	0.12	14.19
50.77	137.99	130.22	130.37	130.53	130.38	0.12	14.91
55.09	138.83	146.93	147.08	147.23	147.08	0.12	16.44
68.95	139.28	153.20	153.35	153.51	153.35	0.12	17.31
60.81	139.54	150.73	150.88	151.04	150.88	0.12	17.86

65.83	140.23	143.51	143.66	143.82	143.66	0.12	19.33
70.84	140.86	140.47	140.83	140.79	140.63	0.13	20.80
74.82	141.33	139.23	139.39	139.56	139.39	0.13	21.97
75.93	141.46	138.99	139.15	139.32	139.16	0.13	22.30
80.77	141.99	139.32	138.49	138.67	138.50	0.14	23.72
85.87	142.52	138.06	138.25	138.45	138.25	0.15	25.22
90.69	143.00	138.09	138.30	138.52	138.30	0.17	26.63
95.99	143.49	138.30	138.57	138.84	138.57	0.21	28.19
100.14	143.86	138.57	138.89	139.22	138.89	0.26	29.41
100.94	143.92	138.62	138.97	139.31	138.97	0.27	29.64
105.80	144.33	138.98	139.47	139.94	139.46	0.37	31.07
110.97	144.74	139.31	140.10	140.85	140.09	0.60	32.59
115.82	145.12	139.67	140.79	142.08	140.84	0.94	34.01
121.00	145.49	140.10	141.60	143.69	141.78	1.41	35.53
126.00	145.85	140.45	142.38	145.10	142.63	1.82	37.00
126.05	145.85	140.46	142.39	145.11	142.64	1.83	37.02
130.87	146.17	140.75	143.16	146.32	143.39	2.18	38.43
135.78	146.49	141.03	143.97	147.52	144.16	2.54	39.87
140.95	146.82	141.27	144.87	148.81	144.97	2.95	41.39
142.99	146.94	141.35	145.24	149.33	145.30	3.12	41.99
145.92	147.12	141.46	145.78	150.09	145.78	3.37	42.85
150.98	147.41	141.65	146.75	151.44	146.62	3.83	44.34
154.71	147.63	141.79	147.51	152.52	147.29	4.19	45.43
155.97	147.70	141.84	147.78	152.89	147.52	4.32	45.81
160.99	147.97	142.26	148.87	154.42	148.54	4.76	47.28
163.23	148.09	142.57	149.39	155.12	149.05	4.91	47.94
166.00	148.24	142.99	150.05	155.99	149.70	5.08	48.75
169.70	148.43	143.52	150.98	157.20	150.59	5.35	49.84
171.00	148.49	143.73	151.32	157.64	150.92	5.44	50.22
174.75	148.88	144.41	152.34	158.96	151.93	5.69	51.32
176.00	148.74	144.67	152.70	159.43	152.29	5.77	51.69
178.81	148.88	145.27	153.54	160.51	153.13	5.96	52.51
181.00	148.99	145.77	154.23	161.38	153.81	6.13	53.15
182.13	149.04	145.97	154.61	161.84	154.17	6.21	53.49
186.00	149.22	146.98	155.96	163.48	155.50	6.46	54.62
191.00	149.45	148.57	157.94	165.82	157.48	6.75	56.09
194.72	149.62	149.91	159.65	167.82	159.16	7.01	57.19
196.00	149.68	150.44	160.30	168.58	159.81	7.09	57.56
201.00	149.90	153.01	163.26	171.95	162.77	7.41	59.03
205.91	150.11	156.54	167.17	176.23	166.68	7.70	60.47
206.00	150.11	156.61	167.25	176.32	166.76	7.71	60.50
211.00	150.32	160.77	171.84	181.26	171.33	8.01	61.97
215.46	150.50	164.46	175.95	185.80	175.44	8.35	63.27
217.53	150.56	166.26	177.85	187.80	177.34	8.42	DIFR
220.00	150.68	171.69	183.41	193.45	182.89	8.51	DIFR
221.00	150.72	173.90	185.66	195.74	185.13	8.54	DIFR
222.00	150.76	176.10	187.91	198.03	187.38	8.58	DIFR
223.00	150.80	178.27	190.16	200.31	189.62	8.62	DIFR
224.00	150.84	180.46	192.41	202.59	191.86	8.66	DIFR
225.00	150.87	182.64	194.66	204.88	194.10	8.70	DIFR



RUN NO. 56

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC FREQUENCY: 2 GHz  
 FACILITY ANTENNA HEIGHT: 3 FT ABOVE MSL TYPE: ISOTROPIC POLARIZATION: CIRCULAR  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI TERRAIN ELEVATION AT SITE: 0 FT  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI OBST HT: DETERMINED AT 4 FT ABOVE MSL  
 CLIMATE: DESERT MINIMUM MONTHLY MEAN: 280 N-UNITS SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	118.66	118.54	118.69	118.84	118.69	0.12	0.29
3.16	119.79	119.67	119.81	119.97	119.82	0.12	0.93
3.44	119.99	119.87	120.02	120.17	120.02	0.12	1.01
3.72	120.20	120.07	120.22	120.38	120.23	0.12	1.09
4.00	120.41	120.29	120.44	120.59	120.44	0.12	1.16
4.28	120.62	120.50	120.65	120.81	120.66	0.12	1.26
4.57	120.85	120.73	120.88	121.03	120.88	0.12	1.34
4.86	121.08	120.96	121.11	121.26	121.11	0.12	1.43
5.15	121.31	121.19	121.34	121.50	121.34	0.12	1.51
5.46	121.55	121.44	121.59	121.74	121.59	0.12	1.60
5.77	121.80	121.69	121.84	121.99	121.84	0.12	1.69
6.00	121.99	121.87	122.02	122.18	122.02	0.12	1.76
6.09	122.06	121.95	122.10	122.25	122.10	0.12	1.79
6.43	122.33	122.21	122.36	122.52	122.36	0.12	1.89
6.78	122.60	122.49	122.64	122.79	122.64	0.12	1.99
7.14	122.89	122.78	122.93	123.08	122.93	0.12	2.10
7.53	123.18	123.07	123.22	123.38	123.22	0.12	2.21
7.94	123.49	123.38	123.53	123.68	123.53	0.12	2.33
8.37	123.81	123.70	123.85	124.00	123.85	0.12	2.46
8.82	124.14	124.03	124.18	124.34	124.18	0.12	2.59
9.31	124.48	124.38	124.53	124.68	124.53	0.12	2.73
9.84	124.84	124.74	124.89	125.04	124.89	0.12	2.89
10.40	125.22	125.12	125.27	125.42	125.27	0.12	3.05
11.00	125.60	125.51	125.66	125.81	125.66	0.12	3.23
11.01	125.61	125.51	125.66	125.82	125.67	0.12	3.23
11.67	126.02	125.93	126.08	126.23	126.08	0.12	3.43
12.40	126.46	126.37	126.52	126.67	126.52	0.12	3.64
13.20	126.92	126.83	126.98	127.13	126.98	0.12	3.88
14.08	127.40	127.32	127.47	127.62	127.47	0.12	4.13
15.06	127.92	127.84	127.99	128.14	127.99	0.12	4.42
15.99	128.38	128.31	128.45	128.61	128.46	0.12	4.70
16.17	128.47	128.39	128.54	128.70	128.54	0.12	4.75
17.42	129.05	128.98	129.13	129.29	129.13	0.12	5.12
18.85	129.68	129.62	129.77	129.92	129.77	0.12	5.53
20.50	130.36	130.30	130.45	130.61	130.45	0.12	6.02
20.97	130.54	130.49	130.64	130.79	130.64	0.12	6.16
22.43	131.09	131.05	131.20	131.35	131.20	0.12	6.59
24.73	131.90	131.86	132.01	132.16	132.01	0.12	7.26
25.93	132.29	132.26	132.41	132.56	132.41	0.12	7.62
27.49	132.78	132.76	132.91	133.06	132.91	0.12	8.07
30.90	133.76	133.75	133.90	134.06	133.91	0.12	9.08
30.99	133.79	133.78	133.93	134.08	133.93	0.12	9.10
35.21	134.86	134.88	135.03	135.18	135.03	0.12	10.34
35.99	135.05	135.07	135.22	135.37	135.22	0.12	10.57
40.80	136.12	136.16	136.31	136.46	136.31	0.12	11.98
41.00	136.16	136.20	136.35	136.51	136.35	0.12	12.04
45.84	137.12	137.18	137.33	137.49	137.33	0.12	13.46
48.33	137.57	137.65	137.80	137.95	137.80	0.12	14.19
53.77	137.99	138.08	138.23	138.39	138.23	0.12	14.91
55.99	138.83	138.95	139.10	139.26	139.10	0.12	16.44
58.95	139.28	139.41	139.56	139.72	139.56	0.12	17.31
60.81	139.54	139.69	139.84	140.00	139.84	0.12	17.86

65.83	140.23	140.40	140.55	140.71	140.56	0.12	19.33
70.84	140.86	141.06	141.22	141.38	141.22	0.13	20.80
74.82	141.33	141.55	141.71	141.86	141.72	0.13	21.97
75.93	141.46	141.68	141.85	142.02	141.85	0.13	22.30
80.77	141.99	142.24	142.41	142.59	142.42	0.14	23.72
85.87	142.52	142.78	142.98	143.18	142.98	0.16	25.22
90.69	143.00	143.25	143.49	143.73	143.49	0.19	26.63
95.99	143.49	143.73	144.02	144.32	144.02	0.23	28.19
100.14	143.86	144.06	144.42	144.79	144.42	0.28	29.41
100.94	143.92	144.12	144.50	144.88	144.50	0.30	29.64
105.80	144.33	144.43	144.95	145.47	144.95	0.40	31.07
110.97	144.74	144.80	145.44	146.23	145.48	0.56	32.59
115.82	145.12	145.21	145.90	147.22	146.10	0.80	34.01
121.00	145.49	145.64	146.39	148.51	146.82	1.17	35.53
126.00	145.85	145.99	146.80	149.55	147.41	1.46	37.00
126.05	145.85	146.00	146.81	149.56	147.41	1.46	37.02
130.87	146.17	146.28	147.16	150.35	147.88	1.68	38.43
135.78	146.49	146.51	147.51	151.09	148.31	1.89	39.87
140.95	146.82	146.82	147.86	151.85	148.72	2.14	41.39
142.99	146.94	146.84	148.00	152.15	148.87	2.25	41.99
145.92	147.12	146.83	148.20	152.59	149.08	2.42	42.85
150.98	147.41	146.82	148.58	153.36	149.45	2.72	44.34
154.71	147.63	146.81	148.83	153.99	149.75	2.96	45.43
155.97	147.70	146.81	148.93	154.21	149.85	3.05	45.81
160.99	147.97	146.80	149.34	155.11	150.28	3.40	47.28
163.23	148.09	146.80	149.54	155.51	150.49	3.56	47.94
166.00	148.24	146.59	149.80	156.04	150.75	3.76	48.75
169.70	148.43	146.57	150.18	156.77	151.11	4.04	49.84
171.00	148.49	146.57	150.33	157.03	151.25	4.15	50.22
174.75	148.68	146.54	150.78	157.87	151.67	4.47	51.32
176.00	148.74	146.53	150.94	158.17	151.82	4.59	51.69
178.81	148.88	146.50	151.34	158.87	152.18	4.87	52.51
181.00	148.99	146.46	151.68	159.45	152.47	5.11	53.16
182.13	149.04	146.44	151.87	159.75	152.63	5.23	53.49
186.00	149.22	146.36	152.58	160.84	153.22	5.68	54.62
191.00	149.45	146.20	153.73	162.43	154.09	6.34	56.09
194.72	149.62	146.05	154.79	163.84	154.89	6.95	57.19
196.00	149.68	145.99	155.21	164.38	155.20	7.18	57.56
201.00	149.90	146.79	157.24	166.81	156.97	7.82	59.03
203.60	150.01	148.01	158.82	168.33	158.34	7.94	59.79
206.00	150.11	150.81	161.89	171.35	161.34	7.99	60.50
211.00	150.32	156.98	168.10	177.66	167.62	8.09	61.97
212.61	150.38	158.84	170.16	179.88	169.66	8.23	DIFR
215.00	150.48	165.79	177.25	187.08	176.74	8.33	DIFR
216.00	150.52	168.69	180.21	190.09	179.70	8.37	DIFR
217.00	150.56	171.80	183.17	193.09	182.65	8.40	DIFR
218.00	150.60	174.51	186.13	196.09	185.61	8.44	DIFR
219.00	150.64	177.42	189.09	199.09	188.57	8.48	DIFR
220.00	150.68	180.33	192.05	202.09	191.52	8.51	DIFR

RUNNO. 57

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI

OBST HT: DETERMINED AT 0 FT ABOVE MSL

TERRAIN DELTA B: 0 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 280 N-UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOSS: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPOSED VALUE	STD DEV	RFF DIST (NMI)
1.00	126.62	126.49	126.66	126.83	126.66	0.13	0.29
5.67	129.68	128.71	129.73	130.89	129.77	0.85	1.66
9.37	132.48	130.72	132.56	134.88	132.71	1.63	2.75
15.27	135.98	133.42	136.09	139.82	136.45	2.55	4.48
18.75	137.60	134.76	137.73	142.19	138.20	2.93	6.50
24.04	139.62	136.50	139.80	144.98	140.39	3.34	7.06
30.74	141.68	138.34	141.90	147.67	142.59	3.68	9.02
35.94	143.00	139.59	143.26	149.33	144.01	3.84	10.55
40.98	144.12	140.67	144.42	150.71	145.21	3.97	12.03
45.84	145.07	141.60	145.41	151.88	146.24	4.06	13.46
50.69	145.94	142.45	146.32	152.92	147.17	4.14	14.88
55.99	146.79	143.30	147.22	153.95	148.09	4.21	16.43
60.50	147.46	143.97	147.92	154.74	148.81	4.26	17.78
65.74	148.18	144.88	148.68	155.56	149.58	4.30	19.30
70.82	148.82	145.33	149.37	156.31	150.28	4.34	20.79
75.93	149.42	145.95	150.02	157.01	150.93	4.37	22.29
80.77	149.95	146.50	150.61	157.63	151.52	4.40	23.71
85.42	150.44	145.54	145.73	145.92	145.73	0.15	25.07
85.99	150.50	146.00	146.19	146.38	146.19	0.15	25.24
86.93	150.59	146.68	146.87	146.07	146.87	0.15	25.52
88.48	150.74	146.98	146.18	146.39	146.18	0.16	25.97
90.08	150.90	148.98	149.19	149.41	149.19	0.17	26.44
90.99	150.98	146.61	146.83	147.05	146.83	0.17	26.71
91.74	151.05	146.14	146.36	146.59	146.36	0.18	26.93
93.44	151.21	149.28	149.52	149.76	149.52	0.19	27.43
95.19	151.38	170.46	170.71	170.97	170.72	0.20	27.94
96.00	151.45	155.64	155.91	156.18	155.91	0.21	26.18
97.01	151.54	149.58	149.86	150.14	149.86	0.22	28.47
98.88	151.70	146.74	147.04	147.35	147.04	0.24	29.02
100.81	151.87	149.87	150.22	150.56	150.22	0.27	29.59
101.00	151.89	150.60	150.95	151.30	150.95	0.27	29.65
102.80	152.04	172.02	172.41	172.79	172.41	0.30	30.17
104.86	152.21	150.14	150.59	151.03	150.69	0.35	30.78
105.99	152.31	147.79	148.28	148.76	148.27	0.38	31.11
106.98	152.39	147.25	147.79	148.31	147.78	0.41	31.40
109.17	152.58	150.33	150.99	151.62	150.98	0.50	32.05
111.00	152.71	163.41	164.20	164.96	164.19	0.61	32.58
111.44	152.74	173.48	174.31	175.10	174.30	0.63	32.71
113.78	152.92	150.34	151.42	152.45	151.40	0.82	33.40
116.00	153.09	147.61	148.65	150.00	148.75	0.94	34.05
116.20	153.10	147.62	148.65	150.03	148.76	0.95	34.11
118.70	153.29	149.97	151.90	153.72	151.86	1.46	34.84
121.00	153.45	167.33	169.69	171.93	169.65	1.79	35.52
121.28	153.47	174.10	176.51	178.79	176.47	1.83	35.80
123.94	153.66	149.48	152.36	155.06	152.30	2.18	36.38
125.99	153.80	148.04	149.69	152.66	150.10	1.83	36.98
126.70	153.85	148.01	149.58	152.63	150.04	1.84	37.19
129.55	154.04	149.13	152.79	156.18	152.71	2.75	38.03
130.99	154.14	154.26	150.08	161.63	158.00	2.88	38.45
132.49	154.24	174.87	178.85	182.57	178.77	3.01	38.89
135.53	154.44	148.86	153.21	157.25	153.12	3.28	39.78
135.99	154.47	148.63	152.34	156.43	152.46	3.05	39.92

138.68	154.64	148.24	150.42	164.77	151.10	2.60	40.71
140.96	154.78	148.70	152.02	166.59	152.41	3.10	41.39
141.92	154.84	148.92	153.64	168.29	153.62	3.66	41.66
145.28	155.04	176.10	161.43	166.38	161.31	4.01	42.64
145.99	155.08	161.07	166.48	171.49	166.36	4.07	42.85
148.74	155.24	149.14	154.07	159.31	154.17	3.97	43.66
150.99	155.37	148.67	151.57	156.99	152.36	3.30	44.32
152.32	155.45	148.55	151.29	156.81	152.16	3.29	44.71
156.00	155.66	149.38	154.51	160.37	154.74	4.30	45.79
156.01	155.66	149.38	154.53	160.39	154.75	4.30	45.79
159.82	155.87	177.59	184.35	190.55	184.17	5.06	46.91
160.99	155.93	157.53	164.41	170.70	164.23	5.15	47.26
163.75	156.08	149.64	155.01	161.52	155.36	4.65	48.07
165.98	156.19	149.15	162.88	159.37	153.66	4.08	48.72
167.81	156.29	148.97	152.25	159.07	153.36	4.04	49.26
170.99	156.45	149.63	154.11	161.17	154.91	4.55	50.19
171.99	156.50	149.91	155.52	162.65	156.00	4.99	50.49
175.99	156.70	168.94	177.20	184.66	176.95	6.14	51.66
176.31	156.72	179.09	187.36	194.86	187.12	6.16	51.75
180.76	156.93	150.20	156.08	163.96	166.70	5.39	53.06
181.00	156.95	150.15	155.75	163.65	156.47	5.30	53.13
185.35	157.15	149.49	153.37	161.62	154.73	4.85	54.41
185.99	157.19	149.54	153.46	161.77	154.83	4.89	54.60
190.08	157.37	150.53	156.69	165.32	157.46	5.80	55.80
191.00	157.41	150.78	158.26	166.95	158.64	6.32	56.06
194.97	157.59	177.22	187.20	196.24	186.91	7.43	57.23
196.00	157.64	159.84	169.90	179.05	169.62	7.51	57.53
200.04	157.81	150.96	157.45	167.01	158.41	6.31	58.72
201.00	157.85	150.77	156.44	166.09	157.68	6.06	59.00
205.33	158.04	150.39	154.98	165.04	156.69	5.87	60.27
206.00	158.07	150.47	155.11	165.23	156.82	5.91	60.47
209.07	158.20	161.19	156.77	167.22	158.29	6.37	61.37
210.99	158.28	151.89	158.80	169.45	169.97	6.91	61.93
211.06	158.28	151.92	158.89	169.55	160.04	6.94	61.95
212.53	158.33	152.43	160.70	171.51	161.49	7.47	62.33
213.22	158.37	152.81	162.15	173.08	162.65	7.93	62.59
213.88	158.39	153.08	163.29	174.33	163.55	8.30	62.78
214.40	158.41	153.30	164.17	175.28	164.25	8.59	62.99
214.82	158.43	153.48	164.83	176.01	164.77	8.80	63.06
215.17	158.45	153.62	165.31	176.56	165.17	8.95	63.16
216.00	158.48	154.14	166.11	177.51	165.94	9.13	63.40
216.04	158.48	154.16	166.14	177.54	165.96	9.13	63.41
216.56	158.50	155.20	167.20	178.63	167.02	9.15	63.57
220.84	158.67	163.74	175.94	187.52	175.75	9.29	
223.00	158.76	170.21	182.54	194.18	182.32	9.37	
224.00	158.80	173.19	185.59	197.26	185.36	9.40	
225.00	158.83	176.17	188.64	200.33	188.40	9.44	
226.00	158.87	179.16	191.68	203.41	191.43	9.47	
227.00	158.91	182.15	194.73	206.48	194.47	9.51	
228.00	158.95	185.14	197.78	209.55	197.51	9.54	

RUN NO. 58

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	126.62	126.51	126.66	126.81	126.66	0.12	0.29
5.67	129.68	129.58	129.73	129.89	129.73	0.12	1.66
9.37	132.48	132.41	132.56	132.71	132.56	0.12	2.75
15.27	135.98	135.94	136.09	136.25	136.10	0.12	4.48
18.75	137.60	137.59	137.73	137.89	137.74	0.12	5.50
24.04	139.62	139.65	139.80	139.95	139.80	0.12	7.06
30.74	141.68	141.75	141.90	142.05	141.90	0.12	9.02
35.94	143.00	143.11	143.26	143.42	143.26	0.12	10.55
40.98	144.12	144.27	144.42	144.57	144.42	0.12	12.03
45.84	145.07	145.26	145.41	145.57	145.42	0.12	13.46
50.66	145.94	146.17	146.32	146.47	146.32	0.12	14.88
55.99	146.79	147.06	147.22	147.37	147.22	0.12	16.43
60.50	147.46	147.77	147.92	148.08	147.92	0.12	17.76
65.74	148.18	148.53	148.68	148.84	148.69	0.12	19.30
70.82	148.82	149.22	149.37	149.54	149.38	0.13	20.79
75.93	149.42	149.86	150.02	150.20	150.03	0.13	22.29
80.77	149.95	150.43	150.61	150.79	150.61	0.14	23.71
85.42	150.44	150.95	151.14	151.33	151.14	0.15	25.07
85.99	150.50	151.01	151.20	151.40	151.21	0.15	25.24
86.93	150.59	151.11	151.31	151.51	151.31	0.15	25.52
88.48	150.74	151.27	151.48	151.69	151.48	0.16	25.97
90.08	150.90	151.44	151.65	151.87	151.65	0.17	26.44
90.99	150.98	151.53	151.75	151.97	151.75	0.17	26.71
91.74	151.05	151.60	151.83	152.05	151.83	0.18	26.93
93.44	151.21	151.77	152.00	152.25	152.01	0.19	27.43
95.19	151.38	151.93	152.19	152.45	152.19	0.20	27.94
96.00	151.45	152.01	152.27	152.54	152.27	0.21	28.18
97.01	151.54	152.09	152.37	152.65	152.37	0.22	28.47
98.88	151.70	152.25	152.56	152.87	152.56	0.24	29.02
100.81	151.87	152.41	152.75	153.10	152.75	0.27	29.59
101.00	151.89	152.43	152.77	153.12	152.77	0.27	29.65
102.80	152.04	152.56	152.95	153.34	152.95	0.30	30.17
104.86	152.21	152.71	153.15	153.60	153.15	0.35	30.78
105.99	152.31	152.77	153.27	153.75	153.26	0.38	31.11
106.98	152.39	152.83	153.36	153.89	153.36	0.41	31.40
109.17	152.56	152.92	153.58	154.21	153.57	0.50	32.05
111.00	152.71	152.97	153.76	154.52	153.75	0.61	32.58
111.44	152.74	152.97	153.80	154.60	153.79	0.63	32.71
113.78	152.92	153.07	154.04	155.08	154.06	0.78	33.40
116.00	153.09	153.24	154.26	155.61	154.36	0.93	34.05
116.20	153.10	153.25	154.29	155.66	154.39	0.95	34.11
118.70	153.29	153.40	154.54	156.36	154.75	1.17	34.84
121.00	153.45	153.51	154.76	156.99	155.07	1.38	35.52
121.28	153.47	153.52	154.79	157.07	155.10	1.41	35.60
123.94	153.66	153.61	155.03	157.73	155.43	1.63	36.38
125.99	153.80	153.68	155.20	158.17	155.65	1.79	36.98
126.70	153.85	153.70	155.26	158.32	155.73	1.84	37.19
129.55	154.04	153.77	155.49	158.87	156.01	2.03	38.03
130.99	154.14	153.81	155.60	159.15	156.15	2.13	38.45
132.49	154.24	153.84	155.71	159.43	156.29	2.23	38.89
135.53	154.44	153.92	155.94	159.98	156.57	2.41	39.78
135.99	154.47	153.93	155.97	160.06	156.61	2.44	39.92

138.68	154.64	153.99	156.16	160.51	156.84	2.60	40.71
140.99	154.78	154.05	156.32	160.89	157.04	2.73	41.39
141.92	154.84	154.07	156.39	161.04	157.12	2.78	41.66
145.28	155.04	154.15	156.62	161.57	157.39	2.96	42.64
145.99	155.08	154.17	156.67	161.68	157.45	2.99	42.85
148.74	155.24	154.24	156.85	162.09	157.67	3.13	43.66
150.99	155.37	154.31	157.00	162.42	157.85	3.23	44.32
152.32	155.45	154.35	157.09	162.61	157.95	3.29	44.71
156.00	155.66	154.45	157.33	163.19	158.26	3.49	45.79
156.01	155.66	154.45	157.33	163.19	158.26	3.49	45.79
159.82	155.87	154.56	157.59	163.78	158.58	3.68	46.91
160.99	155.93	154.59	157.67	163.96	158.67	3.74	47.26
163.75	156.08	154.68	157.84	164.35	158.88	3.86	48.07
165.98	156.19	154.73	157.96	164.65	159.04	3.96	48.72
167.81	156.29	154.78	158.07	164.90	159.18	4.04	49.26
170.99	156.45	154.88	158.29	165.36	159.43	4.18	50.19
171.99	156.50	154.91	158.37	165.51	159.52	4.23	50.49
175.99	156.70	155.05	158.71	166.20	159.90	4.44	51.66
176.31	156.72	155.06	158.74	166.25	159.93	4.46	51.75
180.76	156.93	155.12	158.94	166.85	160.22	4.68	53.06
181.00	156.95	155.12	158.94	166.88	160.22	4.69	53.13
185.35	157.15	155.07	158.98	167.29	160.35	4.89	54.41
185.99	157.18	155.07	159.00	167.38	160.39	4.92	54.60
190.08	157.37	155.20	159.54	168.26	160.91	5.21	55.80
191.00	157.41	155.25	159.75	168.55	161.09	5.29	56.06
194.97	157.59	155.42	160.73	169.93	161.94	5.74	57.23
198.00	157.64	155.39	160.85	170.18	162.06	5.85	57.53
200.04	157.81	154.88	160.10	169.92	161.53	5.97	58.72
201.00	157.85	154.66	159.73	169.66	161.25	5.97	59.00
205.33	158.04	153.68	158.50	168.82	160.21	6.05	60.27
206.00	158.07	153.60	158.46	168.84	160.18	6.09	60.47
209.07	158.20	153.48	159.09	169.81	160.68	6.49	61.37
210.99	158.28	153.69	160.26	171.13	161.60	6.89	61.93
211.06	158.28	153.70	160.32	171.19	161.64	6.91	61.95
212.33	158.33	153.89	161.43	172.41	162.51	7.28	62.33
213.22	158.37	154.04	162.34	173.40	163.20	7.59	62.59
213.88	158.39	154.15	163.04	174.18	163.74	7.84	62.78
214.40	158.41	154.24	163.58	174.78	164.16	8.04	62.93
214.82	158.43	154.32	163.99	175.24	164.48	8.18	63.06
215.17	158.45	154.38	164.30	175.60	164.73	8.30	63.16
215.51	158.46	154.44	164.56	175.93	164.95	8.40	63.26
216.00	158.48	154.63	165.72	177.12	165.82	8.79	63.40
216.56	158.50	155.03	167.03	178.46	166.86	9.15	63.57
220.25	158.65	163.55	175.73	187.29	175.54	9.27	DIFR
223.00	158.76	171.85	184.17	195.82	183.96	9.37	DIFR
224.00	158.80	174.85	187.25	198.92	187.02	9.40	DIFR
225.00	158.83	177.86	190.32	202.02	190.08	9.44	DIFR
226.00	158.87	180.87	193.39	205.11	193.14	9.47	DIFR
227.00	158.91	183.88	196.46	208.21	196.20	9.51	DIFR
228.00	158.95	186.89	199.54	211.31	199.26	9.54	DIFR

RUN NO. 59

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 5 GHz

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN ELEVATION AT SITE: 0 FT

TERRAIN DELTA: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

ORST HT: SPECIFIED AT 25 FT ABOVE MSL

CLIMATE: DESERT

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	126.62	126.51	126.66	126.81	126.66	0.12	0.29
5.67	129.68	129.58	129.73	129.89	129.73	0.12	1.66
9.37	132.48	132.41	132.56	132.71	132.56	0.12	2.75
15.27	135.98	135.94	136.09	136.25	136.10	0.12	4.48
18.75	137.60	137.59	137.73	137.89	137.74	0.12	5.50
24.04	139.62	139.65	139.80	139.95	139.80	0.12	7.06
30.74	141.68	141.75	141.90	142.05	141.90	0.12	9.02
35.94	143.00	143.11	143.26	143.42	143.26	0.12	10.55
40.98	144.12	144.27	144.42	144.57	144.42	0.12	12.03
45.84	145.07	145.26	145.41	145.57	145.42	0.12	13.46
50.69	145.94	146.17	146.32	146.47	146.32	0.12	14.88
55.99	146.79	147.06	147.22	147.37	147.22	0.12	16.43
60.50	147.46	147.77	147.92	148.08	147.92	0.12	17.76
65.74	148.18	148.53	148.68	148.84	148.69	0.12	18.20
70.82	148.82	149.22	149.37	149.54	149.38	0.13	20.79
75.93	149.42	149.86	150.02	150.20	150.03	0.13	22.29
80.77	149.95	150.43	150.61	150.79	150.61	0.14	23.71
85.42	150.44	150.95	151.14	151.33	151.14	0.15	25.07
85.99	150.50	151.01	151.20	151.40	151.21	0.15	25.24
86.93	150.59	151.11	151.31	151.51	151.31	0.15	25.52
88.48	150.74	151.27	151.48	151.69	151.48	0.16	25.97
90.08	150.90	151.44	151.65	151.87	151.65	0.17	26.44
90.99	150.98	151.53	151.75	151.97	151.75	0.17	26.71
91.74	151.05	151.60	151.83	152.05	151.83	0.18	26.93
93.44	151.21	151.77	152.00	152.25	152.01	0.19	27.43
95.19	151.38	151.93	152.19	152.45	152.19	0.20	27.94
96.00	151.45	152.01	152.27	152.54	152.27	0.21	28.18
97.01	151.54	152.09	152.37	152.65	152.37	0.22	28.47
98.88	151.70	152.25	152.56	152.87	152.56	0.24	29.02
100.81	151.87	152.41	152.75	153.10	152.75	0.27	29.59
101.00	151.89	152.43	152.77	153.12	152.77	0.27	29.65
102.80	152.04	152.56	152.95	153.34	152.95	0.30	30.17
104.86	152.21	152.71	153.15	153.60	153.15	0.35	30.78
105.99	152.31	152.77	153.27	153.75	153.26	0.38	31.11
106.98	152.39	152.83	153.36	153.89	153.36	0.41	31.40
109.17	152.56	152.92	153.58	154.21	153.57	0.50	32.05
111.00	152.71	152.97	153.76	154.52	153.75	0.61	32.58
111.44	152.74	152.97	153.80	154.60	153.79	0.63	32.71
113.78	152.92	153.07	154.04	155.06	154.06	0.78	33.40
116.00	153.09	153.24	154.26	155.61	154.36	0.93	34.05
116.20	153.10	153.25	154.29	155.66	154.39	0.95	34.11
118.70	153.29	153.40	154.54	156.36	154.75	1.17	34.84
121.00	153.45	153.51	154.76	156.99	155.07	1.38	35.52
121.28	153.47	153.52	154.79	157.07	155.10	1.41	35.60
123.94	153.66	153.61	155.03	157.73	155.43	1.63	36.38
125.99	153.80	153.68	155.20	158.17	155.65	1.79	36.98
126.70	153.85	153.70	155.25	158.32	155.73	1.84	37.19
129.55	154.04	153.77	155.49	158.87	156.01	2.03	38.03
130.99	154.14	153.81	155.60	159.15	156.15	2.13	38.45
132.49	154.24	153.84	155.71	159.43	156.29	2.23	38.89
135.53	154.44	153.92	155.94	159.98	156.57	2.41	39.78
135.99	154.47	153.93	155.97	160.06	156.61	2.44	39.92

138.88	154.64	153.99	156.16	160.51	156.84	2.60	40.71
140.99	154.78	154.05	156.32	160.89	157.04	2.73	41.39
141.92	154.84	154.07	156.39	161.04	157.12	2.78	41.66
145.28	155.04	154.15	156.62	161.57	157.39	2.96	42.64
145.99	155.08	154.17	156.67	161.68	157.45	2.99	42.85
148.74	155.24	154.24	156.85	162.09	157.67	3.13	43.66
150.99	155.37	154.31	157.00	162.42	157.85	3.23	44.32
152.32	155.45	154.35	157.09	162.61	157.95	3.29	44.71
156.00	155.66	154.45	157.33	163.19	158.26	3.49	45.79
156.01	155.66	154.45	157.33	163.19	158.26	3.49	45.79
159.82	155.87	154.56	157.59	163.78	158.58	3.68	46.91
160.99	155.93	154.59	157.67	163.96	158.67	3.74	47.26
163.75	156.08	154.68	157.84	164.35	158.88	3.80	48.07
165.98	156.19	154.73	157.96	164.65	159.04	3.96	48.72
167.81	156.29	154.78	158.07	164.90	159.18	4.04	49.26
170.99	156.45	154.88	158.29	165.35	159.43	4.18	50.19
171.99	156.50	154.91	158.37	165.51	159.52	4.23	50.49
175.99	156.70	155.05	158.71	166.20	159.90	4.44	51.66
176.31	156.72	155.06	158.74	166.25	159.93	4.46	51.75
180.76	156.93	155.12	158.94	166.85	160.22	4.58	53.06
181.00	156.95	155.12	158.94	166.88	160.22	4.69	53.13
185.35	157.15	155.07	158.98	167.29	160.35	4.89	54.41
185.99	157.18	155.07	159.00	167.38	160.39	4.92	54.60
190.08	157.37	155.20	159.54	168.26	160.91	5.21	55.80
191.00	157.41	155.25	159.73	168.93	161.09	5.29	56.06
194.97	157.59	155.42	160.73	169.93	161.94	5.74	57.23
196.00	157.64	155.39	160.85	170.18	162.06	5.85	57.53
200.04	157.81	154.88	160.10	169.92	161.53	5.97	58.72
201.00	157.85	154.66	159.73	169.66	161.25	5.97	59.00
203.94	157.98	153.94	158.73	168.93	160.42	5.99	59.86
205.33	158.04	154.68	161.54	171.88	162.52	6.76	60.27
206.00	158.07	154.83	162.88	173.26	163.61	7.22	60.47
209.07	158.20	157.77	169.07	179.78	168.89	8.60	61.37
209.57	158.22	158.62	170.07	180.86	169.86	8.69	D:FR
212.00	158.32	164.88	176.48	187.35	176.25	8.78	D:FR
213.00	158.36	167.45	179.12	190.04	178.89	8.82	D:FR
214.00	158.40	170.03	181.76	192.72	181.52	8.86	D:FR
215.00	158.44	172.61	184.39	195.40	184.15	8.90	D:FR
216.00	158.48	175.19	187.03	198.08	186.78	8.94	D:FR
217.00	158.52	177.78	189.67	200.75	189.42	8.98	D:FR
218.00	158.56	180.37	192.30	203.43	192.05	9.01	D:FR



RUN NO. 60

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN DELTA H: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HIT: SPECIFIED AT 50 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	126.62	126.51	126.66	126.81	126.66	0.12	0.29
5.67	129.68	129.58	129.73	129.89	129.73	0.12	1.66
9.37	132.48	132.41	132.56	132.71	132.56	0.12	2.75
15.27	135.98	135.94	136.09	136.25	136.10	0.12	4.48
18.75	137.60	137.59	137.73	137.89	137.74	0.12	5.50
24.04	139.62	139.65	139.80	139.95	139.80	0.12	7.06
30.74	141.68	141.75	141.90	142.05	141.90	0.12	9.02
35.94	143.00	143.11	143.26	143.42	143.26	0.12	10.55
40.98	144.12	144.27	144.42	144.57	144.42	0.12	12.03
45.84	145.07	145.26	145.41	145.57	145.42	0.12	13.46
50.69	145.94	146.17	146.32	146.47	146.32	0.12	14.88
55.99	146.79	147.06	147.22	147.37	147.22	0.12	16.43
60.50	147.46	147.77	147.92	148.08	147.92	0.12	17.76
65.74	148.18	148.53	148.68	148.84	148.69	0.12	19.30
70.82	148.62	149.22	149.37	149.54	149.38	0.13	20.79
75.93	149.42	149.86	150.02	150.20	150.03	0.13	22.29
80.77	149.95	150.43	150.61	150.79	150.61	0.14	23.71
85.42	150.44	150.95	151.14	151.33	151.14	0.15	25.07
85.99	150.50	151.01	151.20	151.40	151.21	0.15	25.24
86.93	150.59	151.11	151.31	151.51	151.31	0.15	25.52
88.48	150.74	151.27	151.48	151.69	151.48	0.16	25.97
90.08	150.90	151.44	151.65	151.87	151.65	0.17	26.44
90.99	150.98	151.53	151.75	151.97	151.75	0.17	26.71
91.74	151.05	151.60	151.83	152.05	151.83	0.18	26.93
93.44	151.21	151.77	152.00	152.25	152.01	0.19	27.43
95.19	151.38	151.93	152.19	152.45	152.19	0.20	27.94
96.00	151.45	152.01	152.27	152.54	152.27	0.21	28.18
97.01	151.54	152.09	152.37	152.65	152.37	0.22	28.47
98.88	151.70	152.25	152.56	152.87	152.56	0.24	29.02
100.81	151.87	152.41	152.75	153.10	152.75	0.27	29.59
101.00	151.89	152.43	152.77	153.12	152.77	0.27	29.65
102.80	152.04	152.56	152.95	153.34	152.95	0.30	30.17
104.86	152.21	152.71	153.15	153.60	153.15	0.35	30.78
105.99	152.31	152.77	153.27	153.75	153.28	0.38	31.11
106.98	152.39	152.83	153.36	153.89	153.36	0.41	31.40
109.17	152.56	152.92	153.58	154.21	153.57	0.50	32.05
111.00	152.71	152.97	153.76	154.52	153.75	0.61	32.58
111.44	152.74	152.97	153.80	154.60	153.79	0.63	32.71
113.78	152.92	153.07	154.04	155.06	154.06	0.78	33.40
116.00	153.09	153.24	154.26	155.61	154.36	0.93	34.05
116.20	153.10	153.25	154.29	155.66	154.39	0.95	34.11
118.70	153.29	153.40	154.54	156.36	154.75	1.17	34.84
121.00	153.45	153.51	154.76	156.99	155.07	1.38	35.52
121.28	153.47	153.52	154.79	157.07	155.10	1.41	35.60
123.94	153.66	153.61	155.03	157.73	155.43	1.63	36.38
125.99	153.80	153.68	155.20	158.17	155.65	1.79	36.98
126.70	153.85	153.70	155.26	158.32	155.73	1.84	37.19
129.55	154.04	153.77	155.49	158.87	156.01	2.03	38.03
130.99	154.14	153.81	155.60	159.15	156.15	2.13	38.45
132.49	154.24	153.84	155.71	159.43	156.29	2.23	38.89
135.53	154.44	153.92	155.94	159.98	156.57	2.41	39.78
135.99	154.47	153.93	155.97	160.06	156.61	2.44	39.92

138.68	154.64	153.99	156.16	160.51	156.84	2.60	40.71
140.99	154.78	154.05	156.32	160.89	157.04	2.73	41.39
141.92	154.84	154.07	156.39	161.04	157.12	2.78	41.66
145.28	155.04	154.15	156.62	161.57	157.39	2.96	42.64
145.99	155.08	154.17	156.67	161.68	157.45	2.99	42.85
148.74	155.24	154.24	156.85	162.09	157.67	3.13	43.66
150.99	155.37	154.31	157.00	162.42	157.85	3.23	44.32
152.32	155.45	154.35	157.09	162.61	157.95	3.29	44.71
156.00	155.66	154.45	157.33	163.19	158.28	3.49	45.79
156.01	155.66	154.45	157.33	163.19	158.26	3.49	45.79
159.82	155.87	154.56	157.59	163.78	158.58	3.68	46.91
160.99	155.93	154.59	157.67	163.96	158.67	3.74	47.26
163.75	156.08	154.68	157.84	164.35	158.83	3.86	48.07
165.98	156.19	154.73	157.96	164.65	159.04	3.96	48.72
167.81	156.29	154.78	158.07	164.90	159.18	4.04	49.26
168.69	156.33	154.81	158.13	165.02	159.24	4.08	49.52
170.99	156.45	155.27	159.30	166.37	160.25	4.40	50.19
171.99	156.50	155.42	159.82	166.96	160.67	4.55	50.49
175.99	156.70	155.86	161.87	169.35	162.33	5.28	51.66
176.31	156.72	155.89	162.03	169.55	162.46	5.34	51.75
180.76	156.93	156.20	164.21	172.23	164.25	6.26	53.06
181.00	156.95	156.21	164.44	172.37	164.35	6.31	53.13
182.16	157.00	155.98	165.03	173.16	164.74	6.71	DIFR
185.00	157.14	157.82	167.09	175.33	166.77	6.85	DIFR
186.00	157.18	158.48	167.82	176.10	167.49	6.89	DIFR
187.00	157.23	159.13	168.54	176.86	168.20	6.93	DIFR
188.00	157.27	159.80	169.27	177.62	168.92	6.97	DIFR
189.00	157.32	160.46	170.00	178.38	169.64	7.01	DIFR
190.00	157.37	161.13	170.72	179.14	170.36	7.04	DIFR
191.00	157.41	161.78	171.45	179.90	171.07	7.08	DIFR
192.00	157.46	162.41	172.18	180.66	171.78	7.14	DIFR
193.00	157.50	163.05	172.90	181.42	172.46	7.18	DIFR
194.00	157.55	163.69	173.63	182.20	173.20	7.24	DIFR
195.00	157.59	164.33	174.36	182.98	173.92	7.29	DIFR
196.00	157.64	164.98	175.08	183.76	174.64	7.34	DIFR
197.00	157.66	165.63	175.81	184.57	175.37	7.40	DIFR
198.00	157.72	166.27	176.54	185.41	176.10	7.48	DIFR
199.00	157.77	166.92	177.26	186.26	176.84	7.56	DIFR
200.00	157.81	167.56	177.99	187.10	177.58	7.64	DIFR
201.00	157.85	168.21	178.72	187.94	178.32	7.71	DIFR
202.00	157.90	168.87	179.45	188.78	179.06	7.78	DIFR
203.00	157.94	169.52	180.18	189.61	179.80	7.85	DIFR

RUN NO. 61

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI  
 TERRAIN DELTA: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST IT: DETERMINED AT 0 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.67	135.70	134.77	135.79	136.94	135.83	0.85	1.68
9.37	138.50	136.79	138.62	140.95	138.78	1.63	2.77
15.27	142.00	139.51	142.18	146.01	142.54	2.55	4.52
18.75	143.62	140.86	143.84	148.30	144.30	2.93	5.55
24.04	145.65	142.63	145.93	151.10	146.51	3.34	7.12
30.74	147.70	144.50	148.06	153.82	148.74	3.68	9.10
35.94	149.02	145.77	149.44	155.51	150.19	3.84	10.64
40.98	150.14	146.87	150.62	156.91	151.41	3.97	12.13
45.84	151.10	147.82	151.64	158.10	152.47	4.06	13.57
50.69	151.96	148.70	152.56	159.17	153.42	4.14	15.00
55.99	152.81	149.57	153.49	160.22	154.37	4.21	16.57
60.50	153.48	150.26	154.22	161.03	155.11	4.26	17.91
65.74	154.20	151.00	155.01	161.89	155.91	4.30	19.46
70.82	154.84	151.68	155.72	162.66	156.63	4.34	20.96
75.93	155.44	152.32	156.40	163.39	157.31	4.37	22.47
80.77	155.97	152.90	157.01	164.04	157.92	4.40	23.91
85.87	156.50	153.49	157.63	164.69	158.54	4.43	25.42
90.69	156.98	154.02	158.18	165.28	159.10	4.45	26.84
95.98	157.47	154.57	158.77	165.90	159.68	4.48	28.41
100.64	157.88	155.05	159.27	166.44	160.19	4.50	29.79
105.64	158.30	155.53	159.80	167.02	160.72	4.54	31.27
110.98	158.72	156.01	160.36	167.66	161.28	4.60	32.85
115.92	159.09	156.35	160.89	168.31	161.79	4.72	34.28
121.00	159.47	156.51	161.44	169.11	162.30	4.96	35.81
125.92	159.82	156.56	161.92	169.83	162.71	5.22	37.27
129.55	160.07	157.71	156.54	160.70	156.95	2.75	38.34
131.00	160.16	157.39	159.61	163.93	150.64	3.34	38.77
131.01	160.16	155.43	159.66	163.98	169.69	3.34	38.77
132.49	160.26	181.24	185.63	190.10	185.65	3.46	39.21
134.00	160.36	155.33	159.90	164.53	159.92	3.59	39.66
135.53	160.46	153.93	157.01	161.80	157.54	3.10	40.11
136.00	160.49	154.03	157.29	162.12	157.78	3.18	40.25
137.09	160.56	155.24	160.14	165.07	160.15	3.84	40.57
138.68	160.66	181.88	186.94	192.02	186.95	3.96	41.04
140.29	160.76	155.18	160.38	165.61	160.39	4.08	41.52
141.00	160.80	154.37	158.31	163.61	158.73	3.62	41.73
141.92	160.86	154.15	157.50	162.88	158.13	3.44	42.00
143.59	160.96	155.14	160.63	166.15	160.64	4.30	42.50
145.28	161.06	182.66	188.33	193.99	188.33	4.43	43.00
146.00	161.10	161.78	167.53	173.25	167.52	4.48	43.21
146.99	161.16	155.03	160.89	166.68	160.87	4.55	43.51
148.74	161.26	154.40	158.01	163.94	158.73	3.77	44.02
150.51	161.37	155.07	161.15	167.22	161.15	4.74	44.55
151.00	161.39	157.27	163.49	169.60	163.46	4.82	44.69
152.32	161.47	183.49	189.03	196.06	189.80	4.91	45.08
154.15	161.57	155.21	161.42	167.81	161.48	4.92	45.62
156.00	161.68	154.66	158.55	165.10	159.38	4.13	46.17
158.01	161.68	154.66	158.55	165.10	159.38	4.13	46.17
157.90	161.78	155.35	161.00	169.41	161.81	5.11	46.73
159.82	161.89	184.36	191.43	198.51	191.37	5.45	47.30
161.00	161.95	158.53	165.70	172.68	165.64	5.53	47.65

161.77	161.99	155.49	161.98	169.03	162.16	5.29	47.88
163.75	162.10	154.93	159.13	166.34	160.07	4.57	48.47
165.76	162.20	155.63	162.29	169.67	162.51	5.49	49.06
166.00	162.22	155.73	163.17	170.57	163.16	5.79	49.13
167.81	162.31	165.29	193.09	200.63	193.01	5.99	49.67
169.89	162.42	155.78	162.80	170.31	162.88	5.68	50.28
171.00	162.47	155.38	160.29	168.08	161.18	5.01	50.81
171.99	162.62	155.21	159.75	167.62	160.79	4.91	50.90
174.14	162.63	155.93	162.93	171.00	163.26	5.89	51.64
176.00	162.72	170.40	178.93	187.17	178.84	6.65	52.09
176.31	162.74	186.12	194.67	202.94	194.68	6.67	52.18
178.62	162.85	156.08	163.27	171.77	163.68	6.14	52.84
180.76	162.95	155.51	160.44	169.17	161.63	5.41	53.50
181.00	162.97	155.53	160.49	169.24	161.67	6.43	53.57
183.04	163.06	156.24	163.63	172.59	164.12	6.40	54.17
185.35	163.17	186.28	195.71	204.89	195.63	7.27	54.86
186.00	163.20	164.68	174.16	183.40	174.09	7.31	55.05
187.70	163.28	156.41	164.02	172.43	164.58	6.66	55.55
190.08	163.39	155.79	161.22	170.87	162.54	5.97	56.26
191.00	163.43	155.91	161.68	171.44	162.93	6.14	56.53
192.51	163.50	156.49	164.44	174.38	165.06	7.00	56.98
194.97	163.61	184.38	194.81	205.08	194.76	8.00	57.71
196.99	163.68	161.19	171.74	182.16	171.70	8.19	58.01
197.48	163.72	156.54	164.90	175.57	165.62	7.45	58.45
200.04	163.83	155.91	162.16	172.99	163.59	6.76	59.20
201.00	163.88	156.12	162.64	173.51	163.99	6.87	59.49
202.65	163.95	156.89	165.46	176.38	166.19	7.64	59.98
205.33	164.06	177.34	188.62	199.64	188.54	8.71	60.77
206.00	164.09	165.63	176.97	188.00	176.87	6.74	60.97
208.11	164.18	157.50	166.23	177.33	166.97	7.77	61.59
211.00	164.30	157.33	163.87	175.08	165.33	7.02	62.45
211.06	164.30	157.35	163.88	175.10	165.34	7.02	62.47
213.22	164.39	168.24	165.72	177.03	166.92	7.39	63.10
214.40	164.44	158.94	167.74	179.11	168.54	7.90	63.45
215.17	164.47	159.41	169.35	180.77	169.81	8.35	63.68
215.72	164.49	159.74	170.57	182.03	170.77	8.71	63.85
216.00	164.50	159.91	171.17	182.64	171.24	8.88	63.93
216.13	164.51	169.99	171.45	182.93	171.45	8.98	63.97
216.46	164.52	160.17	172.08	183.67	171.95	9.14	64.07
216.73	164.53	160.42	172.52	184.02	172.33	9.22	64.15
216.98	164.54	160.71	172.82	184.33	172.64	9.23	64.21
217.27	164.55	161.02	173.14	184.66	172.95	9.24	64.31
217.87	164.57	162.67	174.82	186.36	174.63	9.26	64.48
220.84	164.69	170.89	183.19	194.82	182.98	9.35	
223.00	164.78	179.06	191.52	203.71	191.28	9.43	
224.00	164.82	182.85	195.37	207.09	195.12	9.47	
225.00	164.85	186.64	199.22	210.96	198.96	9.50	
226.00	164.89	190.43	203.07	214.83	202.80	9.53	
227.00	164.93	193.72	206.41	218.21	206.13	9.57	
228.00	164.97	195.37	208.12	219.96	207.84	9.61	

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.84	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.70	135.94	135.76	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.00	142.18	142.34	142.18	0.12	4.52
18.76	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.69	151.96	152.41	152.56	152.72	152.57	0.12	15.00
55.99	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.86	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.69	156.98	157.96	158.18	158.40	158.18	0.17	26.84
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	159.93	160.36	161.93	160.41	1.17	32.85
116.82	159.09	158.86	160.89	163.09	160.04	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.65	161.95	2.88	37.27
129.55	160.07	159.41	162.24	166.40	162.65	2.75	38.34
131.00	160.16	159.47	162.36	166.68	162.81	2.84	38.77
131.01	160.16	159.47	162.37	166.69	162.81	2.84	38.77
132.49	160.26	159.54	162.49	166.97	162.97	2.93	39.21
134.00	160.36	159.60	162.62	167.25	163.12	3.01	39.66
135.53	160.46	159.68	162.74	167.53	163.27	3.10	40.11
136.00	160.49	159.68	162.78	167.61	163.32	3.12	40.26
137.09	160.56	159.72	162.87	167.80	163.43	3.18	40.57
138.68	160.56	159.79	163.00	168.08	163.58	3.27	41.04
140.29	160.76	159.85	163.13	168.36	163.74	3.36	41.52
141.00	160.80	159.87	163.18	168.48	163.80	3.39	41.73
141.92	160.86	159.91	163.26	168.64	163.89	3.44	42.00
143.59	160.96	159.98	163.39	168.91	164.05	3.52	42.50
145.28	161.06	160.05	163.52	169.18	164.20	3.60	43.00
146.00	161.10	160.08	163.58	169.29	164.27	3.64	43.21
146.99	161.16	160.12	163.66	169.45	164.36	3.69	43.51
148.74	161.26	160.19	163.79	169.73	164.52	3.77	44.02
150.51	161.37	160.26	163.93	170.00	164.68	3.85	44.55
151.00	161.39	160.28	163.97	170.08	164.72	3.87	44.69
152.32	161.47	160.33	164.07	170.30	164.85	3.94	45.08
154.15	161.57	160.40	164.21	170.61	165.02	4.03	45.62
156.00	161.68	160.47	164.36	170.91	165.19	4.13	46.17
156.01	161.68	160.47	164.36	170.92	165.19	4.13	46.17
157.90	161.78	160.54	164.51	171.22	165.36	4.22	46.73
159.82	161.89	160.61	164.65	171.54	165.54	4.32	47.30
161.00	161.95	160.66	164.75	171.73	165.65	4.38	47.65

161.77	161.99	160.69	164.81	171.86	165.72	4.42	47.88
163.75	162.10	160.76	164.96	172.18	165.90	4.52	48.47
165.76	162.20	160.84	165.12	172.50	166.09	4.61	49.06
166.00	162.22	160.85	165.14	172.54	166.11	4.63	49.13
167.81	162.31	160.91	165.28	172.82	166.27	4.71	49.67
169.89	162.42	160.99	165.44	173.15	166.46	4.81	50.28
171.00	162.47	161.03	165.53	173.32	166.56	4.86	50.61
171.99	162.52	161.07	165.61	173.48	166.65	4.91	50.90
174.14	162.63	161.15	165.78	173.85	166.85	5.03	51.54
176.00	162.72	161.22	165.93	174.17	167.03	5.13	52.09
176.31	162.74	161.23	165.95	174.22	167.06	5.14	52.18
178.52	162.85	161.30	166.13	174.63	167.28	5.26	52.84
180.76	162.95	161.38	166.31	175.04	167.49	5.41	53.50
181.00	162.97	161.39	166.33	175.08	167.52	5.42	53.57
183.04	163.08	161.46	166.50	175.45	167.72	5.54	54.17
185.35	163.17	161.54	166.70	175.88	167.95	5.68	54.86
186.00	163.20	161.56	166.75	175.99	168.01	5.72	55.05
187.70	163.28	161.61	166.88	176.29	168.17	5.82	55.55
190.08	163.39	161.63	167.05	176.71	168.37	5.98	56.26
191.00	163.43	161.62	167.13	176.89	168.45	6.05	56.53
192.51	163.50	161.61	167.28	177.23	168.62	6.18	56.98
194.97	163.61	161.61	167.57	177.84	168.92	6.42	57.71
195.99	163.66	161.58	167.66	178.08	169.01	6.53	58.01
197.48	163.72	161.49	167.70	178.57	169.09	6.68	58.45
200.04	163.83	161.44	167.69	178.52	169.12	6.76	59.20
201.00	163.88	161.47	167.76	178.64	169.19	6.79	59.49
202.65	163.95	161.57	168.14	179.07	169.50	6.91	59.98
205.33	164.06	161.74	169.12	180.14	170.26	7.24	60.77
206.00	164.09	161.72	169.21	180.25	170.32	7.29	60.97
208.11	164.18	161.40	168.56	179.66	169.79	7.19	61.59
211.00	164.30	160.74	167.28	178.49	168.74	7.02	62.45
211.06	164.30	160.74	167.27	178.48	168.73	7.02	62.47
213.22	164.39	160.70	167.86	179.17	169.15	7.28	63.10
214.40	164.44	160.85	168.06	180.24	169.91	7.61	63.45
215.17	164.47	160.97	169.72	181.13	170.55	7.90	63.66
215.72	164.49	161.06	170.37	181.83	171.04	8.13	63.85
216.00	164.50	161.11	170.69	182.17	171.29	8.24	63.93
216.13	164.51	161.14	170.85	182.33	171.40	8.29	63.97
216.46	164.52	161.19	171.20	182.69	171.67	8.41	64.07
216.71	164.53	161.24	171.45	182.95	171.85	8.49	64.14
216.73	164.53	161.25	171.51	183.01	171.89	8.50	64.15
216.96	164.54	161.35	172.24	183.75	172.43	8.75	64.21
217.87	164.57	163.08	175.23	186.77	175.04	9.26	64.48
220.25	164.67	170.77	183.03	194.65	182.83	9.33	DIFR
223.00	164.78	181.22	193.67	205.36	193.43	9.43	DIFR
224.00	164.82	185.02	197.54	209.26	197.29	9.47	DIFR
225.00	164.95	188.83	201.41	213.15	201.15	9.50	DIFR
226.00	164.89	192.64	205.28	217.04	205.01	9.53	DIFR
227.00	164.93	194.85	207.54	219.34	207.26	9.57	SCAT
228.00	164.97	196.37	209.12	220.97	208.84	9.51	SCAT

RUN NO. 63

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL. TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI TERRAIN ELEVATION AT SITE: 0 FT  
 TERRAIN DELTA h: 30 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 423 NMI MINIMUM MONTHLY MEAN: 280 N-UNITS  
 CLIMATE: DESERT SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.00	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.69	151.96	152.41	152.56	152.72	152.57	0.12	15.00
55.99	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.40	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.69	156.98	157.96	158.18	158.40	158.18	0.17	26.84
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	158.93	160.36	161.93	160.41	1.17	32.85
115.82	159.09	158.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.65	161.95	2.88	37.27
129.55	160.07	159.41	162.24	166.40	162.65	2.75	38.34
131.00	160.16	159.47	162.36	166.68	162.81	2.84	38.77
131.01	160.16	159.47	162.37	166.69	162.81	2.84	38.77
132.49	160.26	159.54	162.49	166.97	162.97	2.93	39.21
134.00	160.36	159.60	162.62	167.25	163.12	3.01	39.66
135.53	160.46	159.66	162.74	167.53	163.27	3.10	40.11
136.00	160.49	159.68	162.78	167.61	163.32	3.12	40.25
137.09	160.56	159.72	162.87	167.80	163.43	3.18	40.57
138.68	160.66	159.79	163.00	168.08	163.58	3.27	41.04
140.29	160.76	159.85	163.13	168.36	163.74	3.36	41.52
141.00	160.80	159.87	163.18	168.48	163.80	3.39	41.73
141.92	160.86	159.91	163.26	168.64	163.89	3.44	42.00
143.59	160.96	159.98	163.39	168.91	164.05	3.52	42.50
145.28	161.06	160.05	163.52	169.18	164.20	3.60	43.00
146.00	161.10	160.08	163.58	169.29	164.27	3.64	43.21
146.99	161.16	160.12	163.66	169.45	164.36	3.69	43.51
148.74	161.26	160.19	163.79	169.73	164.52	3.77	44.02
150.51	161.37	160.26	163.93	170.00	164.68	3.85	44.55
151.00	161.39	160.28	163.97	170.08	164.72	3.87	44.69
152.32	161.47	160.33	164.07	170.30	164.85	3.94	45.08
154.15	161.57	160.40	164.21	170.61	165.02	4.03	45.62
156.00	161.68	160.47	164.36	170.91	165.19	4.13	46.17
156.01	161.68	160.47	164.36	170.92	165.19	4.13	46.17
157.90	161.78	160.54	164.51	171.22	165.36	4.22	46.73
159.82	161.89	160.61	164.65	171.54	165.54	4.32	47.30
161.00	161.95	160.66	164.75	171.73	165.65	4.38	47.65

161.77	161.99	160.69	164.81	171.86	165.72	4.42	47.88
163.75	162.10	160.76	164.96	172.18	165.90	4.52	48.47
165.76	162.20	160.84	165.12	172.50	166.09	4.61	49.06
166.00	162.22	160.85	165.14	172.54	166.11	4.63	49.13
167.81	162.31	160.91	165.28	172.82	166.27	4.71	49.67
169.89	162.42	160.99	165.44	173.15	166.46	4.81	50.28
171.00	162.47	161.03	165.53	173.32	166.56	4.86	50.61
171.99	162.52	161.07	165.61	173.48	166.65	4.91	50.90
174.14	162.63	161.15	165.78	173.85	166.85	5.03	51.54
176.00	162.72	161.22	165.93	174.17	167.03	5.13	52.09
176.31	162.74	161.23	165.95	174.22	167.06	5.14	52.18
178.52	162.85	161.30	166.13	174.63	167.28	5.28	52.84
180.76	162.95	161.38	166.31	175.04	167.49	5.41	53.50
181.00	162.97	161.39	166.33	175.08	167.52	5.42	53.57
183.04	163.05	161.46	166.50	175.45	167.72	5.54	54.17
185.35	163.17	161.54	166.70	175.88	167.95	5.68	54.86
186.00	163.20	161.56	166.75	175.99	168.01	5.72	55.05
187.70	163.28	161.61	166.88	176.29	168.17	5.82	55.55
190.98	163.39	161.63	167.05	176.71	168.31	5.98	56.26
191.00	163.43	161.62	167.13	176.89	168.31	6.05	56.53
192.51	163.50	161.61	167.28	177.23	168.62	6.18	56.98
194.97	163.61	161.61	167.57	177.84	168.92	6.42	57.71
195.99	163.66	161.58	167.66	178.08	169.01	6.53	58.01
197.48	163.72	161.49	167.70	178.37	169.00	6.68	58.45
200.04	163.83	161.44	167.69	178.52	169.12	6.76	59.20
201.00	163.88	161.47	167.76	178.64	169.19	6.79	59.49
202.65	163.95	161.57	168.14	179.07	169.50	6.91	59.98
205.21	164.06	161.74	169.09	180.10	170.23	7.22	60.74
205.33	164.06	161.79	169.34	180.35	170.42	7.30	60.77
208.00	164.09	162.01	170.68	181.72	171.42	7.72	60.97
208.11	164.18	163.45	174.95	186.05	174.82	8.83	61.59
209.57	164.24	166.17	177.88	189.08	177.72	8.95	DIFR
212.00	164.34	173.17	185.02	196.34	184.85	9.05	DIFR
213.00	164.38	176.05	187.96	199.32	187.79	9.09	DIFR
214.00	164.42	178.93	190.89	202.29	190.72	9.13	DIFR
215.00	164.46	181.81	193.83	205.27	193.65	9.16	DIFR
216.00	164.50	184.70	196.77	208.24	196.58	9.20	DIFR
217.00	164.54	187.59	199.70	211.21	199.52	9.23	DIFR
218.00	164.68	190.48	202.64	214.19	202.45	9.26	DIFR



RUN NO. 64

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 6 FT

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

OBST HIT: SPECIFIED AT 50 FT ABOVE MSL

TERRAIN DELTA D: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 280 N-UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.69	151.96	152.41	152.56	152.72	152.57	0.12	15.00
55.99	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.69	156.98	157.96	158.18	158.40	158.18	0.17	26.84
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	158.93	160.36	161.93	160.41	1.17	32.85
115.82	159.09	158.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.65	161.95	2.88	37.27
129.65	160.07	159.41	162.24	166.40	162.65	2.75	38.34
131.00	160.16	159.47	162.36	166.68	162.81	2.84	38.77
131.01	160.16	159.47	162.37	166.69	162.81	2.84	38.77
132.49	160.26	159.54	162.49	166.97	162.97	2.93	39.21
134.00	160.36	159.60	162.62	167.25	163.12	3.01	39.66
135.53	160.46	159.66	162.74	167.53	163.27	3.10	40.11
136.00	160.49	159.68	162.78	167.61	163.32	3.12	40.25
137.09	160.56	159.72	162.87	167.80	163.43	3.18	40.57
138.68	160.66	159.79	163.00	168.08	163.58	3.27	41.04
140.29	160.76	159.85	163.13	168.36	163.74	3.36	41.52
141.00	160.80	159.87	163.18	168.48	163.80	3.39	41.73
141.92	160.86	159.91	163.26	168.64	163.89	3.44	42.00
143.59	160.96	159.98	163.39	168.91	164.05	3.52	42.50
145.28	161.06	160.05	163.52	169.18	164.20	3.60	43.00
146.00	161.10	160.08	163.58	169.29	164.27	3.64	43.21
146.99	161.16	160.12	163.66	169.45	164.36	3.69	43.51
148.74	161.26	160.19	163.79	169.73	164.52	3.77	44.02
150.51	161.37	160.26	163.93	170.00	164.68	3.85	44.55
151.00	161.39	160.28	163.97	170.08	164.72	3.87	44.69
152.32	161.47	160.33	164.07	170.30	164.85	3.94	45.08
154.15	161.57	160.40	164.21	170.61	165.02	4.03	45.62
156.00	161.68	160.47	164.36	170.91	165.19	4.13	46.17
156.01	161.68	160.47	164.36	170.92	165.19	4.13	46.17
157.90	161.78	160.54	164.51	171.22	165.36	4.22	46.73
159.82	161.89	160.61	164.65	171.54	165.54	4.32	47.30
161.00	161.95	160.66	164.75	171.73	165.65	4.38	47.65

161.77	161.99	160.69	164.81	171.86	165.72	4.42	47.88
163.75	162.10	160.76	164.96	172.18	165.90	4.52	48.47
165.76	162.20	160.84	165.12	172.50	166.09	4.61	49.06
166.00	162.22	160.85	165.14	172.54	166.11	4.63	49.13
167.81	162.31	160.91	165.28	172.82	166.27	4.71	49.67
169.89	162.42	160.99	165.44	173.15	166.46	4.81	50.28
171.00	162.47	161.03	165.53	173.32	166.56	4.86	50.61
171.99	162.52	161.07	165.61	173.48	166.65	4.91	50.90
172.54	162.55	161.09	165.65	173.58	166.70	4.94	51.07
174.14	162.63	161.43	166.77	174.84	167.62		51.54
176.00	162.72	161.73	168.08	176.32	168.67		52.09
176.31	162.74	161.78	168.30	176.57	168.85		52.18
178.52	162.85	162.04	169.86	178.36	170.07	5.38	52.84
181.00	162.97	162.57	171.61	180.36	171.54	6.95	53.57
182.16	163.02	163.08	172.43	181.35	172.30	7.14	DIFR
185.00	163.16	165.02	174.58	183.60	174.41	7.26	DIFR
186.00	163.20	165.71	175.33	184.39	175.16	7.30	DIFR
187.00	163.25	166.41	176.09	185.18	175.91	7.33	DIFR
188.00	163.30	167.11	176.85	185.97	176.65	7.37	DIFR
189.00	163.34	167.81	177.60	186.76	177.40	7.40	DIFR
190.00	163.39	168.47	178.36	187.55	178.14	7.45	DIFR
191.00	163.43	169.13	179.12	188.33	178.88	7.50	DIFR
192.00	163.48	169.81	179.88	189.13	179.62	7.55	DIFR
193.00	163.52	170.48	180.63	189.94	180.37	7.60	DIFR
194.00	163.57	171.16	181.39	190.75	181.12	7.65	DIFR
195.00	163.61	171.85	182.15	191.55	181.87	7.70	DIFR
196.00	163.66	172.54	182.91	192.36	182.62	7.75	DIFR
197.00	163.70	173.22	183.67	193.19	183.38	7.80	DIFR
198.00	163.75	173.91	184.43	194.06	184.15	7.88	DIFR
199.00	163.79	174.59	185.19	194.93	184.92	7.95	DIFR
200.00	163.83	175.28	185.95	195.80	185.70	8.02	DIFR
201.00	163.88	175.97	186.71	196.67	186.47	8.09	DIFR
202.00	163.92	176.67	187.47	197.53	187.24	8.15	DIFR
203.00	163.96	177.35	188.23	198.40	188.01	8.22	DIFR
204.00	164.00	178.01	189.00	199.24	188.76	8.29	DIFR

JOHNSON & QIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI  
 TERRAIN DELTA: 150 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOSS: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: DETERMINED AT 18 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	50% DIST (NMI)
1.00	132.64	132.65	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.65
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.69	151.98	152.41	152.56	152.72	152.57	0.12	15.00
55.99	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.72	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.69	156.98	157.98	158.18	158.40	158.18	0.17	26.84
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	158.99	160.36	161.93	160.41	1.17	32.85
115.82	159.09	158.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.85	161.95	2.88	37.27
130.87	160.18	158.47	162.68	166.99	162.71	3.33	38.73
135.77	160.47	158.88	163.64	168.45	163.66	3.74	40.18
140.94	160.80	159.30	164.58	169.85	164.57	4.12	41.71
145.89	161.10	159.70	165.44	171.15	165.43	4.47	43.18
150.97	161.39	160.12	166.34	172.45	166.30	4.82	44.68
155.79	161.66	160.50	167.18	173.70	167.12	5.15	46.11
160.72	161.94	160.90	168.05	175.01	167.99	5.51	47.57
165.87	162.21	161.30	168.88	176.27	168.82	5.85	49.09
170.90	162.47	161.70	169.80	177.59	169.70	6.21	50.58
175.87	162.72	162.08	170.60	178.83	170.51	6.54	52.05
180.97	162.98	162.47	171.51	180.26	171.42	6.95	53.56
185.69	163.19	162.83	172.29	181.50	172.21	7.29	54.98
190.68	163.41	163.18	173.08	182.79	173.02	7.67	56.41
195.66	163.64	163.45	173.95	184.31	173.90	8.16	57.91
200.97	163.87	163.79	174.75	185.62	174.72	8.53	59.46
205.70	164.08	164.21	175.53	186.65	175.44	8.73	60.88
210.84	164.29	164.67	176.35	187.56	176.20	8.94	62.40
211.04	164.30	164.69	176.38	187.60	176.23	8.95	62.46
213.22	164.39	164.88	176.72	188.03	176.56	9.04	63.11
214.40	164.44	164.99	176.90	188.27	176.73	9.10	63.45
215.17	164.47	165.06	177.03	188.44	176.85	9.14	63.68
215.72	164.49	165.11	177.16	188.62	176.98	9.19	63.85
215.72	164.49	165.11	177.16	188.62	176.98	9.19	63.85
216.00	164.50	165.13	177.20	188.67	177.01	9.20	63.93
216.13	164.51	165.14	177.21	188.69	177.03	9.20	63.97
216.46	164.52	165.17	177.26	188.75	177.07	9.21	64.07

216.73	164.63	165.20	177.30	188.80	177.11	9.22	64.15
216.96	164.54	165.22	177.33	188.84	177.14	9.23	64.21
217.87	164.67	170.06	182.21	193.75	182.02	9.26	64.48
217.96	164.58	170.57	182.72	194.27	182.53	9.25	DIFR
220.00	164.66	178.39	190.64	202.26	190.44	9.32	DIFR
221.00	164.70	182.20	194.52	208.16	194.31	9.36	DIFR
222.00	164.74	186.01	198.40	210.07	198.17	9.40	DIFR
223.00	164.78	189.83	202.28	213.97	202.04	9.43	DIFR
224.00	164.82	193.61	206.02	217.74	205.78	9.47	SCAT
225.00	164.85	195.16	207.72	219.47	207.46	9.50	SCAT

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.21 NMI  
 TERRAIN DELTA: 250 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHZ  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: DETERMINED AT 37 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	RFP DIST (NMI)
1.00	132.64	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.69	151.96	152.41	152.56	152.72	152.57	0.12	15.00
55.99	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.69	156.98	157.96	158.13	158.40	158.18	0.17	26.84
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	158.93	160.36	161.93	160.41	1.17	32.85
115.82	159.09	158.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.65	161.95	2.88	37.27
129.65	160.07	159.41	162.24	166.40	162.65	2.75	38.34
131.00	160.16	159.47	162.36	166.66	162.81	2.84	38.77
131.01	160.16	159.47	162.37	166.69	162.81	2.84	38.77
132.49	160.26	159.54	162.49	166.97	162.97	2.93	39.21
134.00	160.36	159.60	162.62	167.25	163.12	3.01	39.66
135.63	160.46	159.66	162.74	167.53	163.27	3.10	40.11
136.00	160.49	159.68	162.78	167.61	163.32	3.12	40.25
137.09	160.58	159.72	162.87	167.80	163.43	3.18	40.57
138.68	160.66	159.79	163.00	168.08	163.58	3.27	41.04
140.29	160.76	159.85	163.13	168.36	163.74	3.36	41.52
141.00	160.80	159.87	163.18	168.48	163.80	3.39	41.73
141.92	160.86	159.91	163.26	168.64	163.89	3.44	42.00
143.59	160.96	159.98	163.39	168.91	164.05	3.52	42.50
145.28	161.06	160.05	163.52	169.18	164.20	3.60	43.00
146.00	161.10	160.08	163.58	169.29	164.27	3.64	43.21
146.99	161.16	160.12	163.66	169.45	164.36	3.69	43.51
148.74	161.26	160.19	163.79	169.73	164.52	3.77	44.02
150.51	161.37	160.26	163.93	170.00	164.68	3.85	44.55
151.00	161.39	160.28	163.97	170.08	164.72	3.87	44.69
152.32	161.47	160.33	164.07	170.30	164.85	3.94	45.08
154.15	161.57	160.40	164.21	170.61	165.02	4.03	45.62
156.00	161.68	160.47	164.36	170.91	165.19	4.13	46.17
156.01	161.68	160.47	164.36	170.92	165.19	4.13	46.17
157.90	161.76	160.54	164.51	171.22	165.36	4.22	46.73
159.82	161.89	160.61	164.65	171.54	165.54	4.32	47.30
161.00	161.95	160.66	164.75	171.73	165.65	4.38	47.65

161.77	161.99	160.89	164.81	171.86	165.72	4.42	47.88
163.75	162.10	160.76	164.96	172.18	165.90	4.52	48.47
165.76	162.20	160.84	165.12	172.50	166.09	4.61	49.06
166.00	162.22	160.85	165.14	172.64	166.11	4.63	49.13
167.81	162.31	160.91	165.28	172.82	166.27	4.71	49.67
169.89	162.42	160.99	165.44	173.15	166.46	4.81	50.28
171.00	162.47	161.03	165.63	173.33	166.56	4.86	50.61
171.99	162.52	161.07	165.61	173.48	166.65	4.91	50.90
174.14	162.63	161.15	165.78	173.85	166.85	5.03	51.54
176.00	162.72	161.22	165.93	174.17	167.03	5.13	52.09
176.31	162.74	161.23	165.95	174.22	167.06	5.14	52.18
178.52	162.85	161.30	166.13	174.63	167.28	5.28	52.84
180.76	162.95	161.38	166.31	175.04	167.50	5.41	53.50
181.00	162.97	161.39	166.33	175.08	167.52	5.42	53.57
183.04	163.06	161.46	166.50	175.45	167.72	5.54	54.17
185.35	163.17	161.54	166.69	175.87	167.93	5.68	54.86
186.00	163.20	161.56	166.74	175.98	168.01	5.71	55.05
187.70	163.28	161.62	166.88	176.29	168.17	5.81	55.55
190.08	163.39	161.65	167.08	176.73	168.40	5.97	56.26
191.00	163.43	161.65	167.16	176.91	168.48	6.05	56.53
192.51	163.50	161.65	167.28	177.23	168.63	6.17	56.98
194.97	163.61	161.64	167.49	177.76	168.87	6.38	57.71
195.99	163.66	161.62	167.58	178.00	168.97	6.49	58.01
197.48	163.72	161.58	167.71	178.37	169.12	6.65	58.45
200.04	163.83	161.68	167.93	178.76	169.36	6.76	59.20
201.00	163.88	161.74	168.01	178.88	169.45	6.78	59.49
202.65	163.95	161.84	168.15	179.08	169.59	6.82	59.98
205.33	164.06	162.01	168.39	179.41	169.84	6.88	60.77
206.00	164.09	162.05	168.46	179.49	169.90	6.90	60.97
208.11	164.18	162.17	168.64	179.74	170.08	6.95	61.59
211.00	164.30	162.25	168.79	180.00	170.25	7.02	62.45
211.00	164.30	162.25	168.79	180.00	170.25	7.02	62.45
211.06	164.30	162.33	169.02	180.23	170.43	7.08	62.47
213.22	164.39	165.43	177.26	188.58	177.10	9.04	63.10
214.40	164.44	169.89	181.80	193.17	181.63	9.10	63.45
214.50	164.44	170.22	182.21	193.63	182.03	9.14	DIFR
217.00	164.54	178.92	191.04	202.55	190.95	9.23	DIFR
218.00	164.58	182.41	194.57	206.12	194.38	9.26	DIFR
219.00	164.62	185.91	198.11	209.69	197.92	9.29	DIFR
220.00	164.66	189.40	201.65	213.26	201.45	9.32	DIFR
221.00	164.70	192.87	205.19	216.83	204.98	9.36	DIFR
222.00	164.74	195.84	208.23	219.89	208.00	9.40	SCAT

RUN NO. 67

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 54 NMI

TERRAIN DELTA h: 0 FT

CLIMATE: DESERT

SURFACE REFLECTION LOSS: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREQ SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	136.16	136.09	136.25	136.42	136.25	0.13	0.30
1.67	136.22	138.33	139.35	140.51	139.39	0.85	1.68
9.37	142.02	140.37	142.21	144.53	142.36	1.63	2.79
16.27	145.52	143.13	145.89	149.62	146.16	2.55	4.54
18.75	147.14	144.50	147.47	151.93	147.94	2.93	5.57
24.04	149.17	146.29	149.59	154.77	150.18	3.34	7.15
30.74	151.22	148.20	151.76	157.53	152.45	3.68	9.13
35.94	152.54	149.51	153.18	159.24	153.92	3.84	10.68
40.98	153.66	150.63	154.39	160.66	155.18	3.97	12.18
45.84	154.62	151.62	155.44	161.90	156.26	4.06	13.62
60.69	155.48	152.52	156.39	163.00	157.25	4.14	15.06
55.99	156.33	153.44	157.25	164.08	158.23	4.21	16.64
60.60	157.00	154.16	158.11	164.93	159.00	4.26	17.98
65.74	157.72	154.94	158.94	165.82	159.84	4.30	19.54
70.82	158.36	155.65	159.69	166.63	160.59	4.34	21.04
75.93	158.96	156.33	160.41	167.39	161.32	4.37	22.57
80.77	159.50	156.95	161.06	168.08	161.97	4.40	24.00
85.87	160.03	157.57	161.71	168.78	162.62	4.43	25.52
90.69	160.50	158.14	162.31	169.41	163.22	4.46	26.95
95.98	160.99	158.73	162.94	170.10	163.86	4.49	28.52
100.64	161.40	159.23	163.49	170.70	164.41	4.53	29.91
105.64	161.82	159.76	164.07	171.34	164.99	4.58	31.39
110.98	162.25	160.28	164.68	172.05	165.61	4.65	32.98
115.82	162.62	160.67	165.26	172.76	166.17	4.77	34.42
121.00	163.00	160.89	165.88	173.62	166.74	5.02	35.96
126.92	163.34	160.99	166.41	174.40	167.21	5.27	37.42
130.87	163.68	161.49	167.27	175.47	168.03	5.49	38.89
135.77	163.99	162.16	168.31	176.67	169.01	5.87	40.35
140.94	164.32	162.85	169.30	177.80	169.94	5.86	41.88
145.89	164.62	163.50	170.28	178.87	170.85	6.02	43.35
150.97	164.91	164.15	171.25	179.93	171.74	6.17	44.86
152.32	164.99	164.99	172.17	180.84	172.71	4.55	45.26
153.63	165.06	165.69	173.08	181.08	173.08	5.23	45.62
154.78	165.13	166.56	174.00	182.19	174.00	5.32	45.99
156.00	165.20	167.00	174.58	183.58	175.58	5.42	46.35
156.01	165.20	167.65	175.51	185.53	176.56	5.42	46.36
167.26	165.27	168.43	176.62	187.75	177.75	4.83	46.73
168.54	165.31	169.83	177.75	189.99	178.79	5.61	47.11
169.82	165.41	169.22	178.46	193.81	179.50	5.70	47.49
181.00	165.47	169.30	179.64	195.09	180.68	5.78	47.84
181.12	165.48	169.84	180.99	174.45	181.03	5.79	47.88
182.43	165.55	169.63	181.11	171.88	182.76	5.12	48.27
183.75	165.62	169.88	182.25	174.93	183.26	5.96	48.66
185.09	165.69	169.99	183.67	205.46	197.71	6.04	49.06
186.00	165.74	162.62	170.40	178.27	170.43	6.11	49.33
186.44	165.76	169.67	167.51	175.41	167.53	6.15	49.46
187.81	165.83	168.84	164.63	172.66	165.33	5.42	49.87
189.19	165.90	169.65	167.77	175.94	167.79	6.36	50.28
170.00	165.97	190.64	198.90	207.20	198.91	6.47	50.69
171.00	165.99	169.41	177.71	186.05	177.72	6.50	50.81
171.99	166.05	169.67	168.05	176.50	168.07	6.57	51.11
173.42	166.12	169.05	165.19	173.79	165.96	5.79	51.53

174.86	166.19	159.72	168.34	177.10	168.39	6.79	51.56
176.00	166.24	172.21	180.02	189.80	180.97	6.67	52.30
176.31	166.26	191.32	200.06	208.98	200.12	6.90	52.39
177.78	166.33	159.74	168.64	177.71	168.69	7.02	52.83
179.26	166.40	159.26	165.79	175.02	166.63	6.19	53.27
180.76	166.48	150.71	168.95	178.38	169.01	7.29	53.72
181.00	166.49	160.92	170.20	179.66	170.26	7.32	53.79
182.28	166.55	191.59	201.02	210.63	201.08	7.44	54.17
183.81	166.62	159.76	169.28	179.08	169.37	7.55	54.62
185.35	166.69	159.30	166.44	176.43	167.33	6.73	55.08
186.00	166.72	159.39	166.98	177.07	167.76	6.93	55.27
186.91	166.77	159.78	169.62	179.86	169.75	7.84	55.54
188.49	166.84	191.35	201.45	211.88	201.55	8.02	56.01
190.08	166.91	159.91	169.98	180.45	170.10	8.03	56.49
191.00	166.95	159.57	167.59	178.09	168.36	7.26	56.76
191.70	166.99	159.51	167.16	177.69	168.06	7.13	56.97
193.33	167.06	180.10	170.36	180.86	170.47	8.15	57.45
194.97	167.13	190.08	200.71	211.38	200.72	8.32	57.94
196.00	167.18	163.62	174.33	185.04	174.33	8.37	58.24
196.64	167.21	160.31	170.77	181.51	170.86	8.28	58.43
198.33	167.28	159.98	167.98	178.78	168.86	7.30	58.94
200.04	167.36	160.55	171.22	182.08	171.28	8.41	59.44
201.00	167.40	166.63	177.64	188.53	177.60	8.56	59.73
201.77	167.43	186.63	197.68	208.60	197.64	8.58	59.96
203.54	167.51	160.85	171.73	182.71	171.76	8.54	60.48
205.33	167.58	160.62	169.03	180.07	169.85	7.62	61.02
206.00	167.61	160.76	169.51	180.57	170.23	7.75	61.22
207.17	167.66	161.25	172.36	183.46	172.36	8.67	61.56
209.07	167.74	179.33	190.95	202.10	190.80	8.90	62.13
211.00	167.82	161.92	173.45	184.70	173.36	8.90	62.70
211.06	167.82	161.92	173.25	184.50	173.23	8.82	62.72
213.22	167.91	162.12	171.01	182.36	171.78	7.93	63.36
214.82	167.97	162.82	172.83	184.26	173.27	8.38	63.84
215.72	168.01	163.34	174.76	186.26	174.79	8.95	64.11
216.00	168.02	163.50	175.44	186.94	175.30	9.16	64.19
216.31	168.03	164.11	176.23	187.75	176.04	9.23	64.28
216.73	168.05	165.16	177.30	188.83	177.11	9.25	64.41
217.06	168.06	165.90	178.06	189.60	177.87	9.26	64.50
217.31	168.07	166.41	178.58	190.13	178.39	9.27	64.58
217.53	168.08	166.76	178.94	190.50	178.75	9.27	64.64
217.70	168.09	167.00	179.18	190.75	178.99	9.28	64.69
217.80	168.09	167.10	179.29	190.86	179.10	9.28	64.72
218.42	168.12	169.20	181.42	193.01	181.22	9.30	64.91
220.84	168.21	177.28	189.65	201.31	189.43	9.39	DIFR
223.00	168.30	186.73	199.23	210.95	198.99	9.47	DIFR
224.00	168.34	191.10	203.67	215.41	203.41	9.50	DIFR
225.00	168.38	195.47	200.10	219.86	207.83	9.53	DIFR
226.00	168.41	199.54	212.22	224.02	211.95	9.57	SCAT
227.00	168.45	201.58	214.32	226.16	214.04	9.61	SCAT
228.00	168.49	203.36	216.16	228.05	215.88	9.64	SCAT



RUN NO. 68

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.93 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED 20 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 240 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREQ SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	136.16	136.10	136.25	136.41	136.25	0.12	0.30
5.67	139.20	139.20	139.35	139.51	139.35	0.12	1.68
9.37	142.00	142.06	142.21	142.36	142.21	0.12	2.79
15.27	145.52	145.65	145.80	145.95	145.80	0.12	4.54
18.75	147.14	147.32	147.47	147.63	147.47	0.12	5.57
24.04	149.17	149.44	149.59	149.74	149.59	0.12	7.15
30.74	151.22	151.61	151.76	151.91	151.76	0.12	9.13
35.94	152.54	153.03	153.18	153.33	153.18	0.12	10.68
40.98	153.66	154.24	154.39	154.54	154.39	0.12	12.18
45.84	154.62	155.29	155.44	155.59	155.44	0.12	13.62
50.69	155.48	156.24	156.39	156.55	156.39	0.12	15.06
55.99	156.33	157.20	157.35	157.51	157.35	0.12	16.64
60.50	157.00	157.96	158.11	158.27	158.11	0.12	17.98
65.74	157.72	158.79	158.94	159.10	158.94	0.12	19.54
70.82	158.36	159.53	159.69	159.86	159.69	0.13	21.04
75.93	158.96	160.25	160.41	160.58	160.41	0.13	22.57
80.77	159.50	160.88	161.06	161.24	161.06	0.14	24.00
85.87	160.03	161.52	161.71	161.91	161.72	0.15	25.52
90.69	160.50	161.91	162.31	162.70	162.31	0.32	26.95
95.98	160.99	162.09	162.94	163.87	162.97	0.70	28.52
100.64	161.40	162.30	163.49	164.85	163.54	1.00	29.91
105.64	161.82	162.54	164.07	165.87	164.15	1.31	31.39
110.98	162.25	162.77	164.68	166.99	164.81	1.65	32.98
115.82	162.62	162.86	165.26	168.11	165.40	2.05	34.42
121.00	163.00	162.70	165.68	169.47	166.01	2.65	35.96
125.92	163.34	162.63	166.41	170.64	166.52	3.17	37.42
130.87	163.68	162.84	167.27	172.05	167.38	3.60	38.89
135.77	163.99	163.35	168.31	173.57	168.40	3.99	40.35
140.94	164.32	163.87	169.30	175.02	169.39	4.36	41.88
145.89	164.62	164.36	170.28	176.42	170.35	4.71	43.35
150.97	164.91	164.86	171.25	177.81	171.30	5.06	44.86
152.32	164.99	164.04	168.96	175.64	169.51	4.55	45.26
153.53	165.06	164.09	169.08	175.87	169.64	4.62	45.62
154.76	165.13	164.14	169.20	176.10	169.77	4.69	45.99
156.00	165.20	164.19	169.32	176.33	169.91	4.76	46.36
156.01	165.20	164.19	169.32	176.33	169.91	4.76	46.36
157.26	165.27	164.25	169.44	176.57	170.04	4.83	46.73
158.54	165.34	164.30	169.56	176.80	170.18	4.90	47.11
159.82	165.41	164.36	169.69	177.04	170.32	4.98	47.49
161.00	165.47	164.41	169.80	177.25	170.44	5.04	47.84
161.12	165.48	164.41	169.81	177.27	170.46	5.05	47.88
162.43	165.55	164.47	169.94	177.51	170.60	5.12	48.27
163.75	165.62	164.52	170.07	177.76	170.74	5.19	48.66
165.09	165.69	164.58	170.21	178.00	170.88	5.27	49.06
166.00	165.74	164.62	170.30	178.16	170.98	5.32	49.33
166.44	165.76	164.64	170.34	178.24	171.03	5.34	49.46
167.31	165.83	164.69	170.48	178.51	171.18	5.42	49.87
169.19	165.90	164.74	170.62	178.78	171.33	5.51	50.28
170.59	165.97	164.80	170.76	179.06	171.49	5.60	50.69
171.00	165.99	164.81	170.80	179.14	171.53	5.62	50.81
171.99	166.05	164.85	170.90	179.35	171.65	5.69	51.11
173.42	166.12	164.91	171.05	179.55	171.82	5.79	51.53

174.86	166.19	164.97	171.20	179.96	171.09	5.89	51.96
176.00	166.24	165.01	171.31	180.20	172.12	5.96	52.30
178.31	166.26	165.02	171.35	180.26	172.16	5.98	52.39
177.78	166.33	165.08	171.50	180.57	172.33	6.08	52.83
179.26	166.40	165.13	171.66	180.89	172.50	6.19	53.27
180.76	166.48	165.14	171.82	181.24	172.67	6.32	53.72
181.00	166.49	165.14	171.84	181.29	172.70	6.34	53.79
182.28	166.55	165.15	171.98	181.59	172.85	6.45	54.17
183.81	166.62	165.16	172.14	181.94	173.02	6.59	54.62
185.35	166.69	165.17	172.31	182.30	173.20	6.73	55.08
186.00	166.72	165.18	172.38	182.47	173.28	6.80	55.27
186.91	166.77	165.15	172.48	182.72	173.39	6.90	55.54
188.49	166.84	165.17	172.66	183.08	173.57	7.03	56.01
190.08	166.91	165.27	172.84	183.30	173.74	7.06	56.49
191.00	166.95	165.32	172.94	183.43	173.84	7.11	56.76
191.70	166.99	165.38	173.02	183.54	173.91	7.13	56.97
193.33	167.06	165.48	173.20	183.80	174.10	7.20	57.45
194.97	167.13	165.57	173.40	184.07	174.28	7.26	57.94
196.00	167.18	165.63	173.52	184.23	174.40	7.30	58.24
196.64	167.21	165.66	173.58	184.32	174.46	7.32	58.43
198.33	167.28	165.75	173.76	184.56	174.33	7.37	58.94
200.04	167.36	165.85	173.98	184.85	174.83	7.45	59.44
201.00	167.40	165.91	174.14	185.04	174.97	7.50	59.73
201.77	167.43	165.95	174.26	185.18	175.07	7.54	59.96
203.54	167.51	166.00	174.40	185.38	175.21	7.59	60.48
205.33	167.58	166.00	174.41	185.45	175.22	7.62	61.02
206.00	167.61	166.01	174.49	185.54	175.29	7.65	61.22
207.17	167.66	166.04	174.84	185.93	175.55	7.79	61.56
209.07	167.74	166.06	175.68	186.83	176.16	8.12	62.13
211.00	167.82	166.03	175.32	186.56	175.87	8.11	62.70
211.08	167.82	166.82	175.28	186.53	175.84	8.10	62.72
213.22	167.91	166.40	174.30	185.65	175.06	7.93	63.36
214.82	167.97	166.28	174.85	186.28	175.43	8.21	63.84
215.72	168.01	166.30	175.71	187.21	176.05	8.56	64.11
216.00	168.02	166.31	176.03	187.54	176.28	8.68	64.19
216.31	168.03	166.33	176.41	187.92	176.54	8.83	64.29
216.73	168.05	166.36	176.93	188.46	176.92	9.02	64.41
217.06	168.06	166.39	177.32	188.86	177.20	9.17	64.50
217.23	168.07	166.41	177.51	189.06	177.34	9.24	64.55
217.31	168.07	166.69	177.86	189.41	177.66	9.27	64.58
217.53	168.08	166.51	178.69	190.25	178.50	9.27	64.64
217.70	168.09	167.21	179.39	190.96	179.20	9.28	64.69
218.42	168.12	170.04	182.25	193.84	182.06	9.30	64.91
220.25	168.19	177.17	189.50	201.14	189.29	9.36	DIFR
223.00	168.30	189.23	201.74	213.46	201.49	9.47	DIFR
224.00	168.34	193.62	206.19	217.93	205.93	9.50	DIFR
225.00	168.38	198.01	210.64	222.40	210.37	9.53	DIFR
226.00	168.41	200.92	213.61	225.40	213.33	9.57	SCAT
227.00	168.45	202.78	215.52	227.36	215.24	9.61	SCAT
228.00	168.49	204.43	217.22	229.11	216.94	9.64	SCAT

RUN NO. 69

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOSS: DETERMINES MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: SPECIFIED AT 25 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	136.16	136.10	136.25	136.41	136.25	0.12	0.30
5.67	139.22	139.20	139.35	139.51	139.35	0.12	1.68
9.37	142.02	142.06	142.21	142.36	142.21	0.12	2.79
15.27	145.52	145.65	145.80	145.95	145.80	0.12	4.54
18.75	147.14	147.32	147.47	147.63	147.47	0.12	5.57
24.04	149.17	149.44	149.59	149.74	149.59	0.12	7.15
30.74	151.22	151.61	151.76	151.91	151.76	0.12	9.13
35.94	152.54	153.03	153.18	153.33	153.18	0.12	10.68
40.98	153.68	154.24	154.39	154.54	154.39	0.12	12.18
45.84	154.62	155.29	155.44	155.59	155.44	0.12	13.62
50.69	155.48	156.24	156.39	156.55	156.39	0.12	15.06
55.99	156.33	157.20	157.35	157.51	157.35	0.12	16.64
60.50	157.00	157.96	158.11	158.27	158.11	0.12	17.98
65.74	157.72	158.79	158.94	159.10	158.94	0.12	19.54
70.82	158.36	159.53	159.69	159.86	159.69	0.13	21.04
75.93	158.96	160.25	160.41	160.58	160.41	0.13	22.57
80.77	159.50	160.88	161.06	161.24	161.06	0.14	24.00
85.87	160.03	161.52	161.71	161.91	161.72	0.15	25.52
90.69	160.50	161.91	162.31	162.73	162.31	0.32	26.95
95.98	160.99	162.09	162.94	163.87	162.97	0.70	28.52
100.64	161.40	162.30	163.49	164.85	163.54	1.00	29.91
105.64	161.82	162.54	164.07	165.87	164.15	1.31	31.39
110.98	162.25	162.77	164.68	166.99	164.81	.85	32.98
115.82	162.62	162.86	165.26	168.11	165.40	2.05	34.42
121.00	163.00	162.70	165.88	169.47	166.01	2.65	35.96
125.92	163.34	162.53	166.41	170.64	166.52	3.17	37.42
130.87	163.68	162.84	167.27	172.05	167.38	3.60	38.89
135.77	163.99	163.35	168.31	173.57	168.40	3.99	40.35
140.94	164.32	163.87	169.30	175.02	169.39	4.36	41.88
145.89	164.62	164.36	170.28	176.42	170.35	4.71	43.35
150.97	164.91	164.86	171.25	177.81	171.30	5.06	44.86
152.32	164.99	164.04	168.96	175.64	169.51	4.55	45.26
153.53	165.06	164.09	169.06	175.87	169.64	4.62	45.62
154.76	165.13	164.14	169.20	176.10	169.77	4.69	45.99
156.00	165.20	164.19	169.32	176.33	169.91	4.76	46.36
156.01	165.20	164.19	169.32	176.33	169.91	4.76	46.36
157.26	165.27	164.25	169.44	176.57	170.04	4.83	46.73
158.54	165.34	164.30	169.56	176.80	170.18	4.90	47.11
159.82	165.41	164.36	169.69	177.04	170.32	4.98	47.49
161.00	165.47	164.41	169.80	177.25	170.44	5.04	47.84
161.12	165.48	164.41	169.81	177.27	170.46	5.05	47.88
162.43	165.55	164.47	169.94	177.51	170.60	5.12	48.27
163.75	165.62	164.52	170.07	177.76	170.74	5.19	48.66
165.09	165.69	164.58	170.21	178.00	170.88	5.27	49.06
166.00	165.74	164.62	170.30	178.16	170.98	5.32	49.33
166.44	165.76	164.54	170.34	178.24	171.03	5.34	49.46
167.81	165.83	164.69	170.48	178.51	171.18	5.42	49.87
169.19	165.90	164.74	170.62	178.78	171.33	5.51	50.28
170.59	165.97	164.80	170.76	179.06	171.49	5.60	50.69
171.00	165.99	164.81	170.80	179.14	171.53	5.62	50.81
171.99	166.05	164.85	170.90	179.35	171.65	5.69	51.11
173.42	166.12	164.91	171.05	179.65	171.82	5.70	51.53

174.86	166.19	164.97	171.20	179.96	171.99	5.89	51.96
176.00	166.24	165.01	171.31	180.20	172.12	5.96	52.30
176.31	166.26	165.02	171.35	180.26	172.16	5.98	52.39
177.78	166.33	165.08	171.50	180.57	172.33	6.08	52.83
179.26	166.40	165.13	171.66	180.89	172.50	6.19	53.27
180.76	166.48	165.14	171.82	181.24	172.67	6.32	53.72
181.00	166.49	165.14	171.84	181.29	172.70	6.34	53.79
182.28	166.55	165.15	171.98	181.59	172.85	6.45	54.17
183.81	166.62	165.16	172.14	181.94	173.02	6.59	54.62
185.35	166.69	165.17	172.31	182.30	173.20	6.73	55.08
185.00	166.72	165.16	172.38	182.47	173.28	6.80	55.27
186.91	166.77	165.15	172.48	182.72	173.30	6.90	55.54
188.49	166.84	165.17	172.66	183.08	173.57	7.03	56.01
190.08	166.91	165.27	172.84	183.30	173.74	7.08	56.49
191.00	166.95	165.32	172.94	183.43	173.84	7.11	56.76
191.70	166.99	165.36	173.02	183.54	173.91	7.13	56.97
193.33	167.06	165.46	173.20	183.80	174.10	7.20	57.45
194.97	167.13	165.57	173.40	184.07	174.28	7.26	57.94
196.00	167.18	165.63	173.52	184.23	174.40	7.30	58.24
196.64	167.21	165.66	173.58	184.32	174.46	7.32	58.43
198.33	167.28	165.75	173.76	184.56	174.63	7.37	58.94
200.04	167.36	165.85	173.98	184.85	174.83	7.45	59.44
201.00	167.40	165.91	174.14	185.04	174.97	7.50	59.73
201.77	167.43	165.95	174.26	185.18	175.07	7.54	59.96
203.54	167.51	166.00	174.40	185.38	175.21	7.59	60.48
205.83	167.60	166.01	174.46	185.51	175.27	7.64	61.17
206.00	167.61	166.08	174.89	185.95	175.59	7.78	61.22
209.57	167.76	172.40	184.16	195.41	184.00	8.99	DIFR
212.00	167.86	179.84	191.75	203.10	191.57	9.08	DIFR
213.00	167.90	182.91	194.86	206.26	194.69	9.12	DIFR
214.00	167.94	185.97	197.98	209.41	197.80	9.16	DIFR
215.00	167.98	189.04	201.10	212.57	200.92	9.19	DIFR
216.00	168.02	192.11	204.22	215.72	204.03	9.22	DIFR
217.00	168.06	195.18	207.34	218.88	207.15	9.26	DIFR
218.00	168.10	198.26	210.46	222.03	210.26	9.29	DIFR

RUN NO. 70

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION: AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

OBSTACLE SPECIFIED AT 50 FT ABOVE MSL

TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MONTHLY MEAN: 280 N-UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOSS: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	136.16	136.10	136.25	136.41	136.25	0.12	0.30
5.67	139.22	139.20	139.35	139.51	139.35	0.12	1.69
9.37	142.02	142.06	142.21	142.36	142.21	0.12	2.79
15.27	145.52	145.65	145.80	145.95	145.80	0.12	4.54
18.75	147.14	147.32	147.47	147.63	147.47	0.12	5.57
24.04	149.17	149.44	149.59	149.74	149.59	0.12	7.15
30.74	151.22	151.61	151.76	151.91	151.76	0.12	9.13
35.94	152.54	153.03	153.18	153.33	153.18	0.12	10.68
40.98	153.66	154.24	154.39	154.54	154.39	0.12	12.18
45.84	154.62	155.29	155.44	155.59	155.44	0.12	13.62
50.68	155.48	156.24	156.39	156.55	156.39	0.12	15.06
55.99	156.33	157.20	157.35	157.51	157.35	0.12	16.64
60.50	157.00	157.96	158.11	158.27	158.11	0.12	17.98
65.74	157.72	158.79	158.94	159.10	158.94	0.12	19.54
70.82	158.36	159.53	159.69	159.86	159.69	0.13	21.04
75.93	158.96	160.25	160.41	160.58	160.41	0.13	22.57
80.77	159.50	160.88	161.06	161.24	161.06	0.14	24.00
85.87	160.03	161.52	161.71	161.91	161.72	0.15	25.52
90.69	160.50	161.91	162.31	162.73	162.31	0.32	26.95
95.98	160.99	162.09	162.94	163.87	162.97	0.70	28.52
100.64	161.40	162.30	163.49	164.85	163.54	1.00	29.91
105.64	161.82	162.54	164.07	165.87	164.15	1.31	31.30
110.98	162.25	162.77	164.68	166.99	164.81	1.65	32.98
115.82	162.62	162.86	165.26	168.11	165.40	2.05	34.42
121.00	163.00	162.70	165.88	169.47	166.01	2.65	35.96
125.92	163.34	162.53	166.41	170.64	166.52	3.17	37.42
130.87	163.68	162.84	167.27	172.05	167.38	3.60	38.89
135.77	163.99	163.35	168.31	173.57	168.40	3.99	40.35
140.94	164.32	163.87	169.30	175.02	169.39	4.36	41.88
145.89	164.62	164.36	170.28	176.42	170.35	4.71	43.35
150.97	164.91	164.86	171.25	177.81	171.30	5.06	44.86
152.32	164.99	164.04	168.96	175.64	169.51	4.55	45.26
153.53	165.06	164.09	169.08	175.87	169.64	4.62	45.62
154.76	165.13	164.14	169.20	176.10	169.77	4.69	45.99
156.00	165.20	164.19	169.32	176.33	169.91	4.76	46.36
156.01	165.20	164.19	169.32	176.33	169.91	4.76	46.36
157.26	165.27	164.25	169.44	176.57	170.04	4.83	46.73
158.54	165.34	164.30	169.56	176.80	170.18	4.90	47.11
159.82	165.41	164.36	169.69	177.04	170.32	4.98	47.49
161.00	165.47	164.41	169.80	177.25	170.44	5.04	47.84
161.12	165.48	164.41	169.81	177.27	170.46	5.05	47.88
162.43	165.55	164.47	169.94	177.51	170.60	5.12	48.27
163.75	165.62	164.52	170.07	177.76	170.74	5.19	48.66
165.09	165.69	164.58	170.21	178.00	170.88	5.27	49.06
166.00	165.74	164.62	170.30	178.16	170.98	5.32	49.33
166.44	165.76	164.64	170.34	178.24	171.03	5.34	49.46
167.81	165.83	164.69	170.48	178.51	171.18	5.42	49.87
169.19	165.90	164.74	170.62	178.78	171.33	5.51	50.28
170.59	165.97	164.80	170.76	179.06	171.49	5.60	50.69
171.00	165.99	164.81	170.80	179.14	171.53	5.62	50.81
171.99	166.05	164.85	170.90	179.35	171.65	5.69	51.11
173.42	166.12	164.91	171.05	179.65	171.82	5.79	51.53

174.27	166.16	164.94	171.14	179.83	171.92	5.85	51.79
174.86	166.19	165.05	171.64	190.40	172.32	6.02	51.96
176.00	166.24	165.24	172.63	181.51	173.09	6.37	52.30
176.31	166.26	165.29	172.90	181.81	173.30	6.46	52.39
177.78	166.33	165.48	174.17	183.24	174.29	6.94	52.83
181.00	166.49	167.68	176.96	186.41	177.01	7.32	53.79
182.16	166.54	168.38	177.97	187.58	177.98	7.50	DIFR
185.00	166.68	170.52	180.30	190.01	180.28	7.61	DIFR
186.00	166.72	171.28	181.12	190.86	181.09	7.65	DIFR
187.00	166.77	172.05	181.95	191.72	181.91	7.68	DIFR
188.00	166.82	172.82	182.77	192.57	182.72	7.72	DIFR
189.00	166.86	173.55	183.59	193.42	183.53	7.76	DIFR
190.00	166.91	174.29	184.42	194.27	184.33	7.81	DIFR
191.00	166.95	175.02	185.24	195.13	185.14	7.86	DIFR
192.00	167.00	175.77	186.07	196.01	185.96	7.91	DIFR
193.00	167.04	176.52	186.90	196.88	186.77	7.95	DIFR
194.00	167.09	177.27	187.72	197.75	187.59	8.00	DIFR
195.00	167.13	178.03	188.55	198.62	188.41	8.04	DIFR
196.00	167.18	178.79	189.38	199.49	189.23	8.09	DIFR
197.00	167.22	179.55	190.21	200.38	190.06	8.14	DIFR
198.00	167.27	180.30	191.04	201.29	190.89	8.20	DIFR
199.00	167.31	181.05	191.87	202.21	191.72	8.27	DIFR
200.00	167.35	181.81	192.70	203.12	192.55	8.33	DIFR
201.00	167.40	182.57	193.53	204.03	193.39	8.39	DIFR
202.00	167.44	183.33	194.36	204.94	194.22	8.44	DIFR
203.00	167.48	184.05	195.20	205.85	195.05	8.52	DIFR
204.00	167.53	184.79	196.03	206.76	195.87	8.58	DIFR

RUN NO. 71

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 66000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHZ

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI

OBST HT: DETERMINED AT 0 FT ABOVE MSL

TERRAIN DELTA: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 280 N UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	138.56	138.46	138.61	138.77	138.62	0.12	0.22
5.65	139.56	139.24	139.63	140.04	139.64	0.31	1.23
10.69	141.47	140.58	141.55	142.64	141.59	0.81	2.33
13.70	142.66	141.41	142.76	144.36	142.84	1.15	2.98
17.90	144.23	142.54	144.35	146.63	144.50	1.60	3.89
24.44	146.36	144.15	146.51	149.75	146.79	2.20	5.32
29.56	147.78	145.29	147.96	151.80	148.33	2.56	6.43
32.81	148.59	145.95	148.79	152.97	149.21	2.76	7.14
36.76	149.49	146.71	149.71	154.23	150.18	2.96	8.00
41.68	150.50	147.58	150.76	155.65	151.29	3.18	9.07
48.00	151.66	148.60	151.95	157.25	152.56	3.41	10.45
55.93	152.93	149.75	153.27	158.95	153.95	3.63	12.17
60.40	153.58	150.37	153.95	159.79	154.65	3.72	13.14
65.60	154.27	151.03	154.68	160.68	155.42	3.81	14.27
70.80	154.92	151.66	155.36	161.51	156.13	3.89	15.41
75.89	155.51	152.24	155.99	162.26	156.78	3.96	16.51
80.70	156.03	152.76	156.55	162.92	157.35	4.01	17.56
85.78	156.55	153.29	157.11	163.58	157.93	4.07	18.67
90.70	157.03	153.77	157.62	164.18	158.46	4.12	19.74
95.52	157.47	154.22	158.10	164.73	158.96	4.16	20.79
100.83	157.94	154.70	158.61	165.32	159.48	4.20	21.94
105.58	158.33	155.11	159.04	165.81	159.93	4.23	22.98
110.31	158.71	155.50	159.46	166.27	160.35	4.26	24.01
115.43	159.10	155.90	159.89	166.75	160.79	4.29	25.12
120.96	159.50	156.32	160.34	167.24	161.24	4.32	26.32
125.78	159.84	156.68	160.72	167.65	161.62	4.34	27.37
130.86	160.18	157.05	161.11	168.08	162.02	4.36	28.48
135.82	160.50	157.39	161.48	168.48	162.39	4.38	29.55
140.72	160.81	157.73	161.84	168.86	162.75	4.40	30.62
145.93	161.12	158.08	162.21	169.26	163.12	4.42	31.76
150.75	161.40	158.39	162.54	169.62	163.46	4.44	32.80
155.66	161.68	158.71	162.88	169.98	163.79	4.46	33.87
160.83	161.96	159.03	163.22	170.35	164.14	4.48	35.00
165.81	162.23	159.33	163.55	170.70	164.47	4.49	36.08
170.61	162.47	159.61	163.86	171.05	164.78	4.52	37.13
175.63	162.72	159.89	164.19	171.42	165.10	4.56	38.22
180.88	162.98	160.14	164.53	171.80	165.44	4.62	39.36
185.87	163.21	160.28	164.86	172.27	165.74	4.73	40.45
190.85	163.44	160.24	165.19	172.80	166.02	4.95	41.53
195.99	163.67	160.26	165.81	173.73	166.55	5.29	42.65
200.92	163.89	160.88	166.96	175.08	167.60	5.57	43.72
206.00	164.10	161.40	167.90	176.15	168.45	5.78	44.83
206.30	164.12	157.62	160.45	165.35	161.10	3.06	44.89
208.06	164.19	158.17	163.55	168.63	163.46	4.08	45.28
209.84	164.26	183.77	189.50	194.74	189.34	4.29	45.66
211.00	164.31	181.16	167.02	172.37	166.26	4.38	45.91
211.65	164.34	158.26	163.74	169.14	163.72	4.25	46.06
213.47	164.41	157.75	160.83	166.39	161.61	3.42	46.45
215.32	164.49	158.35	163.94	169.65	163.98	4.41	46.86
216.00	164.52	160.99	167.35	173.12	167.16	4.74	47.00
217.19	164.56	184.24	190.72	196.57	190.52	4.82	47.26
219.08	164.64	158.43	164.14	170.14	164.23	4.57	47.67

220.99	164.71	157.89	161.23	167.38	162.11	3.77	48.09
221.00	164.71	157.89	161.24	167.38	162.11	3.77	48.09
222.92	164.79	158.52	164.34	170.63	164.49	4.73	48.51
224.87	164.86	184.97	192.03	198.45	191.83	5.27	48.93
226.00	164.91	161.57	169.74	175.23	168.53	5.34	49.18
226.85	164.94	158.61	164.56	171.11	164.75	4.88	49.36
228.84	165.02	158.08	161.66	168.34	162.62	4.09	49.80
230.86	165.09	158.71	164.78	171.59	165.01	6.03	50.24
231.00	166.10	158.76	165.27	172.09	165.37	6.21	50.27
232.91	165.17	185.70	193.44	200.38	193.19	5.74	50.68
234.97	165.24	158.80	165.01	172.09	165.28	6.19	51.13
236.00	165.28	168.42	162.76	169.92	163.84	4.64	51.35
237.06	165.32	158.23	162.12	169.35	163.16	4.42	51.59
239.17	165.40	168.90	165.25	172.63	165.57	6.37	52.05
241.00	165.46	172.90	181.20	188.72	180.95	6.18	52.44
241.30	165.47	186.63	194.96	202.50	194.72	6.20	52.51
243.46	165.55	169.00	165.49	173.19	165.87	6.55	52.98
245.64	165.63	158.41	162.61	170.47	163.75	4.79	53.45
246.00	165.64	158.45	162.71	170.59	163.84	4.82	53.53
247.85	165.71	159.10	165.75	173.76	166.18	5.74	53.93
250.08	165.78	187.52	198.53	204.70	196.27	6.71	54.42
251.00	165.82	163.82	172.89	181.12	172.63	6.76	54.62
252.33	165.86	159.20	166.02	174.34	166.49	6.92	54.91
254.61	165.94	158.61	163.15	171.62	164.38	6.17	55.40
256.00	165.99	158.94	164.28	172.82	165.27	6.48	55.71
256.91	166.02	159.31	166.31	174.93	166.81	6.11	55.90
259.23	166.10	188.40	198.03	206.80	197.76	7.19	56.41
261.00	166.15	159.62	168.65	177.57	168.62	7.01	56.78
261.59	166.17	159.42	166.81	175.58	167.16	6.33	56.92
263.96	166.25	158.82	163.75	172.94	165.08	6.61	57.44
266.00	166.32	159.37	165.97	175.35	166.84	6.27	57.88
266.37	166.33	169.53	166.62	176.33	167.55	6.58	57.96
268.80	166.41	188.67	198.97	208.60	198.76	7.79	58.49
271.00	166.48	159.74	168.01	177.83	168.49	7.08	58.97
271.25	166.49	169.65	167.26	177.11	167.96	6.84	59.03
273.74	166.57	169.00	164.43	174.52	166.88	6.16	59.57
276.00	166.64	169.58	166.97	177.29	167.88	6.95	60.06
276.25	166.65	169.88	167.62	177.97	168.38	7.17	60.11
278.80	166.73	186.90	197.96	208.57	197.82	8.47	60.67
280.99	166.79	169.85	169.14	180.04	169.64	7.90	61.16
281.38	166.81	169.67	168.04	179.00	168.85	7.67	61.23
284.00	166.89	169.02	165.26	176.36	166.77	6.87	61.80
286.00	166.95	169.63	167.07	178.22	168.23	7.31	62.24
286.66	166.97	169.96	168.63	179.70	169.34	7.74	62.36
289.39	167.05	179.88	191.64	202.91	191.49	8.99	62.97
291.00	167.10	161.33	173.16	184.48	173.01	9.04	63.32
292.20	167.13	160.51	169.25	180.61	170.07	7.87	63.59
295.18	167.22	160.33	166.86	178.31	168.40	7.12	64.23
296.00	167.25	160.57	167.25	178.73	168.76	7.10	64.41
297.34	167.28	161.20	168.67	180.19	169.93	7.48	64.70
298.52	167.32	161.89	170.68	182.23	171.54	7.97	64.98
299.30	167.34	162.36	172.29	183.87	172.80	8.41	65.13
299.85	167.36	162.67	173.49	185.11	173.74	8.77	65.25
300.26	167.37	162.91	174.36	185.99	174.42	9.02	65.34
300.59	167.38	163.09	174.98	186.62	174.90	9.19	65.41
300.86	167.39	163.24	175.42	187.06	175.25	9.31	65.47
301.09	167.39	163.38	175.72	187.37	175.50	9.37	65.52
301.57	167.41	163.77	176.14	187.80	175.92	9.39	65.62
302.00	167.42	164.94	177.33	188.99	177.10	9.40	65.72
305.14	167.51	173.55	186.08	197.81	185.83	9.48	DIFF



RUN NO. 72

JOHNSON & ORSHAN

AIRCRAFT ALTITUDE: 66000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 400 NMI

OBST HGT: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA: 50 FT REFRACTIVITY: REFRACTIVE: EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 280 N UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOSS: DETERMINES MEDIAN

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCLUDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FRESH SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	128.86	128.46	128.61	128.77	128.62	0.12	0.22
5.65	139.86	129.48	129.63	129.78	129.63	0.12	1.23
10.69	141.47	141.40	141.55	141.71	141.55	0.12	2.33
13.70	142.66	142.61	142.76	142.91	142.76	0.12	2.98
17.00	144.23	144.20	144.35	144.60	144.35	0.12	3.89
24.44	146.36	146.36	146.51	146.67	146.52	0.12	6.32
29.86	147.78	147.81	147.96	148.12	147.96	0.12	6.43
32.81	148.69	148.64	148.79	148.94	148.79	0.12	7.14
36.76	149.49	149.56	149.71	149.87	149.71	0.12	8.00
41.88	150.80	150.81	150.76	150.91	150.76	0.12	9.07
48.00	151.66	151.80	151.95	152.11	151.95	0.12	10.46
55.63	152.93	152.13	152.27	152.42	152.28	0.12	12.17
60.40	153.88	153.80	153.95	154.10	153.95	0.12	13.14
65.60	154.27	154.53	154.88	154.83	154.68	0.12	14.27
70.60	154.92	155.21	155.36	155.52	155.36	0.12	15.41
76.89	155.51	155.84	155.96	156.14	155.99	0.12	16.61
80.70	156.03	156.40	156.55	156.70	156.55	0.12	17.86
85.78	156.58	156.95	157.11	157.26	157.11	0.12	18.67
90.70	157.03	157.47	157.62	157.78	157.62	0.12	19.74
95.82	157.47	157.99	158.10	158.26	158.10	0.12	20.76
100.83	157.94	158.49	158.51	158.77	158.61	0.12	21.94
105.88	158.33	158.88	159.04	159.20	159.04	0.12	22.98
110.31	158.71	159.30	159.46	159.62	159.46	0.12	24.01
115.43	159.10	159.73	159.89	160.06	159.89	0.12	25.12
120.96	159.50	160.17	160.34	160.62	160.34	0.12	26.32
125.78	159.84	160.55	160.72	160.91	160.72	0.14	27.27
130.86	160.10	160.92	161.11	161.30	161.12	0.16	28.48
135.82	160.50	161.28	161.40	161.69	161.48	0.16	29.66
140.72	160.81	161.63	161.84	162.06	161.84	0.17	30.82
145.93	161.12	161.97	162.21	162.45	162.21	0.19	31.76
150.76	161.40	162.27	162.54	162.81	162.54	0.21	32.80
155.60	161.68	162.57	162.88	163.18	162.87	0.24	33.87
160.83	161.96	162.86	163.22	163.57	163.22	0.28	35.00
165.81	162.23	163.08	163.55	163.99	163.54	0.28	36.08
170.61	162.47	163.13	163.86	164.59	163.86	0.57	37.13
175.93	162.72	163.11	164.19	165.28	164.19	0.85	38.22
180.88	162.98	163.04	164.53	166.00	164.54	1.18	39.36
185.87	163.21	162.81	164.88	166.92	164.87	1.61	40.46
190.86	163.44	162.34	165.19	167.98	165.17	2.20	41.53
195.89	163.67	161.98	165.51	169.45	165.75	2.93	42.66
200.92	163.89	162.28	165.86	171.28	166.84	3.62	43.72
205.00	164.10	162.55	167.40	172.77	167.75	3.99	44.83
208.30	164.12	163.22	168.15	171.05	168.80	3.06	44.89
208.08	164.19	163.38	168.24	171.33	168.94	3.15	45.28
209.84	164.26	163.40	168.36	171.60	167.07	3.25	45.66
211.00	164.31	163.47	168.42	171.77	167.16	3.30	45.91
211.65	164.34	163.44	168.46	171.86	167.20	3.34	46.06
213.47	164.41	163.48	168.56	172.12	167.34	3.42	46.45
216.32	164.49	163.52	168.67	172.38	167.47	3.51	46.85
218.00	164.52	163.54	168.71	172.47	167.52	3.54	47.00
217.19	164.56	163.56	168.78	172.63	167.60	3.60	47.26
219.08	164.64	163.60	168.88	172.81	167.73	3.60	47.67

220.00	164.71	163.64	166.99	173.14	167.87	3.77	48.09
221.00	164.71	163.65	166.99	173.14	167.87	3.77	48.09
222.92	164.79	163.69	167.10	173.39	168.00	3.85	48.51
224.87	164.86	163.74	167.22	173.63	168.13	3.92	48.93
226.00	164.91	163.77	167.28	173.77	166.21	3.97	49.18
226.85	164.94	163.79	167.33	173.88	168.27	4.00	49.36
228.84	165.02	163.84	167.45	174.12	168.40	4.08	49.80
230.86	165.09	163.89	167.55	174.37	169.54	4.16	50.24
231.00	165.10	163.89	167.57	174.39	168.55	4.17	50.27
232.91	165.17	163.94	167.68	174.62	168.68	4.24	50.68
234.97	165.24	163.99	167.80	174.88	168.82	4.32	51.13
236.00	165.28	164.01	167.87	175.02	168.90	4.37	51.35
237.06	165.32	164.04	167.93	175.16	168.97	4.42	51.59
239.17	165.40	164.09	168.06	175.44	169.12	4.51	52.05
241.00	165.46	164.14	168.17	175.69	169.26	4.59	52.44
241.30	165.47	164.14	168.18	175.73	169.29	4.60	52.51
243.46	165.55	164.20	168.32	176.02	169.43	4.69	52.98
245.64	165.63	164.25	168.45	176.31	169.59	4.79	53.45
246.00	165.64	164.26	168.47	176.35	169.62	4.80	53.53
247.85	165.71	164.30	168.59	176.60	169.75	4.88	53.93
250.08	165.78	164.36	168.72	176.89	169.91	4.98	54.42
251.00	165.82	164.38	168.78	177.01	169.98	5.02	54.62
252.33	165.86	164.41	168.87	177.18	170.07	5.07	54.91
254.61	165.94	164.47	169.01	177.48	170.24	5.17	55.40
256.00	165.99	164.50	169.10	177.66	170.34	5.22	55.71
258.91	166.02	164.53	169.16	177.76	170.40	5.26	55.90
259.23	166.10	164.59	169.31	178.08	170.57	5.36	56.41
261.00	166.15	164.63	169.43	178.34	170.71	5.45	56.79
261.59	166.17	164.64	169.47	178.44	170.76	5.48	56.92
263.96	166.25	164.69	169.62	179.81	170.95	5.61	57.44
265.00	166.32	164.74	169.76	179.14	171.12	5.72	57.88
266.37	166.33	164.74	169.78	179.20	171.15	5.74	57.96
268.80	166.41	164.80	169.96	179.59	171.35	5.87	58.49
271.00	166.48	164.84	170.10	179.93	171.53	5.99	58.97
271.25	166.49	164.85	170.12	179.97	171.55	6.00	59.03
273.74	166.57	164.84	170.27	180.35	171.72	6.16	59.57
276.00	166.64	164.80	170.44	180.77	171.91	6.33	60.06
276.25	166.65	164.80	170.47	180.82	171.93	6.35	60.11
276.80	166.72	164.77	170.73	181.25	172.18	6.57	60.67
280.99	166.79	164.65	170.84	181.75	172.31	6.77	61.15
281.38	166.81	164.62	170.84	181.80	172.32	6.80	61.23
284.00	166.89	164.55	170.79	181.88	172.30	6.87	61.80
286.00	166.95	164.60	171.04	182.18	172.51	6.96	62.24
286.66	166.97	164.64	171.21	182.39	172.65	7.02	62.38
289.39	167.05	164.78	172.17	183.44	173.38	7.34	62.97
291.00	167.10	164.65	172.12	183.44	173.32	7.40	63.32
292.20	167.13	164.41	171.57	182.93	172.88	7.30	63.59
295.18	167.22	163.71	170.25	181.70	171.78	7.12	64.23
296.00	167.25	163.63	170.25	181.74	171.77	7.16	64.41
297.34	167.28	163.65	170.81	182.32	172.17	7.36	64.70
298.52	167.32	163.78	171.80	183.35	172.90	7.69	64.96
299.30	167.34	163.90	172.64	184.22	173.53	7.97	65.13
299.85	167.36	163.99	173.29	184.91	174.01	8.19	65.25
300.28	167.37	164.06	173.76	185.39	174.36	8.35	65.34
300.59	167.38	164.11	174.11	185.75	174.62	8.46	65.41
300.88	167.39	164.15	174.37	186.02	174.82	8.55	65.47
301.02	167.39	164.18	174.51	186.15	174.92	8.59	65.50
301.39	167.39	164.21	174.73	186.38	175.09	8.66	65.52
302.00	167.42	165.29	177.68	189.35	177.45	9.40	65.72
304.58	167.49	173.42	185.93	197.65	185.69	9.47	DIFR

RUN NO. 73

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 66000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBING: DETERMINES MEDIAN TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCLUDED

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: SPECIFIED AT 25 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N UNITS

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	138.56	138.46	138.61	138.77	138.62	0.12	0.22
5.65	139.56	139.48	139.63	139.78	139.63	0.12	1.23
10.69	141.47	141.40	141.55	141.71	141.55	0.12	2.33
13.70	142.66	142.61	142.76	142.91	142.76	0.12	2.98
17.90	144.23	144.20	144.35	144.50	144.35	0.12	3.89
24.44	146.36	146.36	146.51	146.67	146.52	0.12	5.32
29.56	147.78	147.81	147.96	148.12	147.96	0.12	6.43
32.81	148.59	148.64	148.79	148.94	148.79	0.12	7.14
36.76	149.49	149.56	149.71	149.87	149.71	0.12	8.00
41.68	150.50	150.61	150.76	150.91	150.76	0.12	9.07
48.00	151.66	151.80	151.95	152.11	151.95	0.12	10.45
55.93	152.93	153.13	153.27	153.43	153.28	0.12	12.17
60.40	153.58	153.80	153.95	154.10	153.95	0.12	13.14
65.60	154.27	154.53	154.68	154.83	154.68	0.12	14.27
70.80	154.92	155.21	155.36	155.52	155.36	0.12	15.41
75.89	155.51	155.84	155.99	156.14	155.99	0.12	16.51
80.70	156.03	156.40	156.55	156.70	156.55	0.12	17.56
85.78	156.55	156.95	157.11	157.26	157.11	0.12	18.67
90.70	157.03	157.47	157.62	157.78	157.62	0.12	19.74
95.52	157.47	157.95	158.10	158.26	158.10	0.2	20.79
100.83	157.94	158.45	158.61	158.77	158.61	0.12	21.94
105.58	158.33	158.88	159.04	159.20	159.04	0.12	22.58
110.31	158.71	159.30	159.46	159.62	159.46	0.13	24.01
115.43	159.10	159.73	159.89	160.06	159.89	0.13	25.12
120.96	159.50	160.17	160.34	160.52	160.34	0.13	26.32
125.78	159.84	160.55	160.72	160.91	160.73	0.14	27.37
130.88	160.18	160.93	161.11	161.30	161.12	0.15	28.48
135.82	160.50	161.28	161.48	161.69	161.48	0.16	29.55
140.72	160.81	161.63	161.84	162.06	161.84	0.17	30.62
145.93	161.12	161.97	162.21	162.45	162.21	0.19	31.76
150.75	161.40	162.27	162.54	162.81	162.54	0.21	32.80
155.66	161.68	162.57	162.88	163.18	162.87	0.24	33.87
160.83	161.96	162.86	163.22	163.57	163.22	0.28	35.00
165.81	162.23	163.08	163.55	163.99	163.54	0.36	36.08
170.61	162.47	163.13	163.86	164.52	163.86	0.57	37.13
175.63	162.72	163.11	164.19	165.28	164.19	0.55	38.22
180.88	162.98	163.04	164.53	166.06	164.54	1.18	39.36
185.87	163.21	162.81	164.86	166.92	164.87	1.61	40.45
190.85	163.44	162.34	165.19	167.98	165.17	2.20	41.53
195.99	163.67	161.96	165.81	169.45	165.75	2.93	42.65
200.92	163.89	162.26	166.96	171.28	166.84	3.52	43.72
206.00	164.10	162.55	167.90	172.77	167.75	3.99	44.83
206.30	164.12	163.32	166.15	171.05	166.80	3.06	44.89
208.06	164.19	163.36	166.25	171.33	166.94	3.15	45.28
209.84	164.26	163.40	166.36	171.60	167.07	3.25	45.66
211.00	164.31	163.43	166.42	171.77	167.16	3.30	45.91
211.65	164.34	163.44	166.46	171.86	167.20	3.34	46.06
213.47	164.41	163.48	166.56	172.12	167.34	3.42	46.45
215.32	164.49	163.52	166.67	172.38	167.47	3.51	46.86
216.00	164.52	163.54	166.71	172.47	167.52	3.54	47.00
217.19	164.56	163.56	166.78	172.63	167.60	3.60	47.26
219.08	164.64	163.60	166.88	172.89	167.73	3.68	47.67

220.99	164.71	163.64	166.99	173.14	167.87	3.77	48.09
221.00	164.71	163.65	166.99	173.14	157.87	3.77	48.09
222.92	164.79	163.69	167.10	173.39	168.00	3.85	48.51
224.87	164.86	163.74	167.22	173.63	168.13	3.92	48.93
226.00	164.91	163.77	167.28	173.77	168.21	3.97	49.18
226.85	164.94	163.79	167.33	173.88	168.27	4.00	49.36
228.84	165.02	163.04	167.45	174.12	168.40	4.08	49.80
230.86	165.09	163.89	167.56	174.37	168.54	4.16	50.24
231.00	165.10	163.89	167.57	174.39	168.55	4.17	50.27
232.91	165.17	163.94	167.68	174.62	168.68	4.24	50.68
234.97	165.24	163.99	167.80	174.88	168.82	4.32	51.13
236.00	165.28	164.01	167.87	175.02	168.90	4.37	51.35
237.06	165.32	164.04	167.93	175.16	168.97	4.42	51.59
239.17	165.40	164.09	168.06	175.44	169.12	4.51	52.05
241.00	165.46	164.14	168.17	175.69	169.26	4.59	52.44
241.30	165.47	164.14	168.18	175.73	169.28	4.60	52.51
243.46	165.55	164.20	168.32	176.02	169.43	4.69	52.98
245.64	165.63	164.25	168.45	176.31	169.59	4.79	53.45
246.00	165.64	164.26	168.47	176.35	169.62	4.80	53.53
247.85	165.71	164.30	168.59	176.60	169.75	4.88	53.93
250.08	165.78	164.36	168.72	176.89	169.91	4.98	54.42
251.00	165.82	164.38	168.78	177.01	169.98	5.02	54.62
252.33	165.86	164.41	168.87	177.18	170.07	5.07	54.91
254.61	165.94	164.47	169.01	177.48	170.24	5.17	55.40
256.00	165.99	164.50	169.10	177.66	170.34	5.22	55.71
256.91	166.02	164.53	169.16	177.78	170.40	5.26	55.90
259.23	166.10	164.59	169.31	178.08	170.57	5.36	56.41
261.00	166.15	164.63	169.43	178.34	170.71	5.45	56.79
261.59	166.17	164.64	169.47	178.44	170.76	5.48	55.92
263.96	166.25	164.69	169.62	178.81	170.95	5.61	57.44
265.00	166.32	164.74	169.76	179.14	171.12	5.72	57.88
266.37	166.33	164.74	169.78	179.20	171.15	5.74	57.96
268.80	166.41	164.80	169.96	179.59	171.35	5.87	58.49
271.00	166.48	164.84	170.10	179.93	171.53	5.99	58.97
271.25	166.49	164.85	170.12	179.97	171.55	6.00	59.03
273.74	166.57	164.84	170.27	180.35	171.72	6.16	59.57
275.00	166.64	164.80	170.44	180.77	171.91	6.33	60.06
276.25	166.65	164.80	170.47	180.82	171.93	6.35	60.11
278.80	166.73	164.77	170.73	181.35	172.18	6.57	60.67
280.99	166.79	164.65	170.84	181.75	172.31	6.77	61.15
281.38	166.81	164.62	170.84	181.80	172.32	6.80	61.23
284.00	166.89	164.55	170.79	181.88	172.30	6.87	61.80
286.00	166.95	164.60	171.04	182.18	172.51	6.96	62.24
286.86	166.97	164.64	171.22	182.39	172.65	7.02	62.38
289.39	167.05	164.78	172.17	183.44	173.38	7.34	62.97
290.08	167.07	164.76	172.25	183.54	173.44	7.39	63.12
291.00	167.10	165.11	174.70	186.02	175.24	8.18	63.32
292.20	167.13	166.02	177.90	189.26	177.73	9.08	63.59
293.87	167.18	170.24	182.31	193.79	182.13	9.20	DIFR
296.00	167.25	177.24	189.38	200.92	189.19	9.25	DIFR
297.00	167.27	180.52	192.70	204.25	192.50	9.27	DIFR
298.00	167.30	183.80	196.01	207.59	195.81	9.29	DIFR
299.00	167.33	187.06	199.32	210.92	199.12	9.32	DIFR
300.00	167.36	190.34	202.63	214.26	202.42	9.54	DIFR
301.00	167.39	193.60	205.94	217.59	205.73	9.37	DIFR

RUN NO. 74

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 66000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

GRAIN DENSITY: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOSS: DETERMINED MEDIAN

TYPE: ISOTROPIC

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST INT: SPECIFIED AT 50 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	138.56	138.46	138.61	138.77	138.62	0.12	0.22
0.65	139.56	139.46	139.63	139.78	139.63	0.12	1.23
12.69	141.47	141.43	141.55	141.71	141.55	0.12	2.33
13.70	142.66	142.61	142.76	142.91	142.76	0.12	2.99
17.00	144.23	144.20	144.35	144.50	144.35	0.12	3.89
24.44	146.36	146.36	146.51	146.67	146.52	0.12	5.32
29.55	147.78	147.81	147.96	148.12	147.96	0.12	6.43
32.81	148.59	148.64	148.79	148.94	148.79	0.12	7.14
36.76	149.49	149.56	149.71	149.87	149.71	0.12	8.00
41.08	150.50	150.61	150.76	150.91	150.76	0.12	9.07
48.00	151.65	151.80	151.95	152.11	151.95	0.12	10.45
55.23	152.93	153.13	153.27	153.43	153.28	0.12	12.17
60.40	153.80	153.80	153.95	154.10	153.95	0.12	13.14
65.60	154.27	154.53	154.68	154.83	154.68	0.12	14.27
70.80	154.92	155.21	155.36	155.52	155.36	0.12	15.41
75.89	155.51	155.84	155.99	156.14	155.99	0.12	16.51
80.70	156.03	156.40	156.55	156.70	156.55	0.12	17.56
85.78	156.55	156.95	157.11	157.26	157.11	0.12	18.67
90.70	157.03	157.47	157.62	157.78	157.62	0.12	19.74
95.52	157.47	157.65	158.10	158.28	158.10	0.12	20.79
100.83	157.94	158.45	158.61	158.77	158.61	0.12	21.94
105.58	158.33	158.88	159.04	159.20	159.04	0.12	22.98
110.31	158.71	159.30	159.46	159.62	159.46	0.13	24.01
115.43	159.10	159.73	159.89	160.06	159.89	0.13	25.12
120.96	159.50	160.17	160.34	160.52	160.34	0.13	26.32
126.78	159.94	160.55	160.72	160.91	160.73	0.14	27.37
130.86	160.18	160.93	161.11	161.30	161.12	0.15	28.48
135.82	160.50	161.25	161.48	161.69	161.48	0.16	29.55
140.72	160.81	161.63	161.84	162.06	161.84	0.17	30.62
145.93	161.12	161.97	162.21	162.45	162.21	0.19	31.75
150.76	161.40	162.27	162.54	162.81	162.54	0.21	32.80
155.66	161.68	162.57	162.88	163.18	162.87	0.24	33.87
160.83	161.96	162.86	163.22	163.57	163.22	0.28	35.00
165.81	162.23	163.08	163.55	163.99	163.54	0.36	36.08
170.61	162.47	163.13	163.86	164.50	163.86	0.57	37.13
175.63	162.72	163.11	164.19	165.28	164.19	0.85	38.22
180.88	162.98	163.04	164.53	166.06	164.54	1.18	39.36
195.87	163.21	162.81	164.86	166.92	164.87	1.61	40.45
190.05	163.44	162.34	165.19	167.98	165.17	2.20	41.53
195.99	163.67	161.96	165.51	169.45	165.75	2.93	42.65
200.92	163.89	162.26	165.95	171.28	166.84	3.52	43.72
206.00	164.10	162.55	167.93	172.77	167.75	3.99	44.83
206.39	164.12	163.32	166.15	171.05	166.90	3.05	44.85
208.66	164.19	163.36	166.25	171.33	166.94	3.15	45.28
209.84	164.26	165.40	166.36	171.60	167.07	3.25	45.66
211.69	164.31	163.43	166.42	171.77	167.16	3.30	45.91
211.65	164.34	163.44	165.46	171.86	167.20	3.34	46.06
213.47	164.41	163.48	165.56	172.12	167.34	3.42	46.45
215.32	164.49	163.52	166.67	172.38	167.47	3.51	46.86
216.69	164.52	163.54	166.71	172.47	167.52	3.54	47.00
217.19	164.56	163.56	166.78	172.63	167.60	3.60	47.26
219.08	164.64	163.69	166.88	172.63	167.73	3.58	47.67

220.99	164.71	163.64	166.99	173.14	167.87	3.77	48.09
221.00	164.71	163.65	166.99	173.14	167.87	3.77	48.09
222.92	164.79	163.69	167.10	173.39	168.00	3.85	48.51
224.87	164.86	163.74	167.22	173.63	168.13	3.92	48.93
226.00	164.91	163.77	167.28	173.77	168.21	3.97	49.18
226.85	164.94	163.79	167.33	173.88	168.27	4.00	49.36
228.84	165.02	163.84	167.45	174.12	168.40	4.08	49.80
230.86	165.09	163.89	167.56	174.37	168.54	4.16	50.24
231.00	165.10	163.89	167.57	174.39	168.55	4.17	50.27
232.91	165.17	163.94	167.68	174.62	168.68	4.24	50.68
234.97	165.24	163.99	167.80	174.88	168.82	4.32	51.13
236.00	165.28	164.01	167.87	175.02	168.90	4.37	51.35
237.06	165.32	164.04	167.93	175.16	168.97	4.42	51.59
239.17	165.40	164.09	168.06	175.44	169.12	4.51	52.05
241.00	165.46	164.14	168.17	175.69	169.26	4.59	52.44
241.30	165.47	164.14	168.18	175.73	169.28	4.60	52.51
243.46	165.55	164.20	168.32	176.02	169.43	4.69	52.98
245.64	165.63	164.25	168.45	176.31	169.59	4.79	53.45
246.00	165.64	164.26	168.47	176.35	169.62	4.80	53.53
247.85	165.71	164.30	168.59	176.60	169.75	4.88	53.93
250.08	165.78	164.36	168.72	176.89	169.91	4.98	54.42
251.00	165.82	164.38	168.78	177.01	169.96	5.02	54.62
252.33	165.86	164.41	168.87	177.18	170.07	5.07	54.91
254.61	165.94	164.47	169.01	177.48	170.24	5.17	55.40
254.99	165.95	164.48	169.04	177.53	170.26	5.18	55.49
256.00	165.99	164.68	169.66	178.22	170.78	5.36	55.71
256.91	166.02	164.83	170.23	178.85	171.23	5.53	55.90
259.23	166.10	165.13	171.67	180.44	172.37	6.00	56.41
261.00	166.15	165.31	172.77	181.68	173.22	6.40	56.79
261.59	166.17	165.37	173.13	182.11	173.51	6.54	56.92
265.78	166.31	166.00	176.30	185.58	175.98	7.65	DIFR
269.00	166.38	166.96	177.38	186.73	177.05	7.73	DIFR
269.00	166.42	167.65	178.11	187.50	177.78	7.76	DIFR
270.00	166.45	168.34	178.85	188.26	178.51	7.79	DIFR
271.00	166.48	169.03	179.58	189.03	179.24	7.82	DIFR
272.00	166.51	169.72	180.32	189.79	179.97	7.84	DIFR
273.00	166.54	170.42	181.05	190.56	180.70	7.87	DIFR
274.00	166.58	171.11	181.79	191.32	181.43	7.90	DIFR
275.00	166.61	171.81	182.52	192.08	182.16	7.92	DIFR
276.00	166.64	172.50	183.26	192.85	182.89	7.95	DIFR
277.00	166.67	173.17	184.00	193.61	183.62	7.99	DIFR
278.00	166.70	173.85	184.73	194.37	184.34	8.02	DIFR
279.00	166.73	174.52	185.47	195.14	185.07	8.06	DIFR
280.00	166.76	175.20	186.21	195.90	185.80	8.09	DIFR
281.00	166.79	175.89	186.95	196.66	186.53	8.12	DIFR
282.00	166.83	176.57	187.69	197.42	187.26	8.15	DIFR
283.00	166.86	177.25	188.43	198.18	187.99	8.18	DIFR
284.00	166.89	177.95	189.17	198.94	188.72	8.21	DIFR
285.00	166.92	178.64	189.91	199.70	189.45	8.24	DIFR
286.00	166.95	179.33	190.65	200.48	190.19	8.27	DIFR
287.00	166.98	180.03	191.39	201.26	190.92	8.30	DIFR
288.00	167.01	180.72	192.13	202.04	191.66	8.34	DIFR

RUN NO. 75

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL. TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 30 FT ABOVE MSL. TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.1 NMI  
 TERRAIN DELTA h: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION COEFF: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 5 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT. DETERMINED AT 0 FT ABOVE MSL.  
 MINIMUM MONTHLY MEAN: 260 N UNITS  
 SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	123.27	123.10	123.30	123.52	123.31	0.16	0.35
5.06	127.66	126.28	127.72	129.46	127.81	1.25	1.78
10.43	132.64	130.08	132.76	136.61	133.12	2.57	3.66
14.34	135.18	132.20	135.34	140.15	135.86	3.13	5.03
20.83	138.29	134.96	138.51	144.27	139.20	3.67	7.31
25.90	140.14	136.71	140.41	146.57	141.18	3.90	9.09
30.85	141.63	138.16	141.96	148.40	142.78	4.05	10.63
35.76	142.90	139.41	143.29	149.92	144.15	4.16	12.55
40.69	144.01	140.52	144.46	151.25	145.35	4.24	14.28
45.80	145.03	141.53	145.54	152.42	146.43	4.30	16.08
50.87	145.94	142.45	146.51	153.46	147.41	4.35	17.85
55.80	146.74	143.27	147.37	154.38	148.28	4.39	19.58
60.89	147.49	144.05	148.20	155.26	149.11	4.43	21.37
65.75	148.16	144.76	148.93	156.04	149.85	4.46	23.08
70.79	148.80	145.45	149.65	156.80	150.57	4.49	24.84
75.63	149.37	146.08	150.31	157.50	151.23	4.51	26.54
80.97	149.06	146.75	151.03	158.26	151.95	4.55	28.42
85.83	150.47	147.29	151.71	159.03	152.61	4.64	30.12
90.93	150.97	147.66	152.38	159.91	153.26	4.83	31.91
95.99	151.44	147.91	152.86	160.69	153.79	5.03	33.69
100.76	151.86	148.11	153.44	161.36	154.25	5.21	35.36
105.90	152.29	148.47	154.14	162.24	154.90	5.41	37.17
110.88	152.69	149.08	155.05	163.32	155.77	5.59	38.92
115.99	153.08	149.74	156.07	164.47	156.72	5.78	40.71
120.73	153.43	150.30	156.91	165.42	157.50	5.92	42.37
125.71	153.78	150.92	157.91	166.47	158.40	6.08	44.12
130.97	154.13	151.52	158.86	167.50	159.27	6.25	45.97
135.85	154.45	152.09	159.81	168.52	160.12	6.42	47.68
140.91	154.77	152.62	160.72	169.50	160.93	6.60	49.45
145.77	155.06	153.11	161.64	170.45	161.73	6.77	51.16
150.55	155.34	153.55	162.48	171.44	162.49	6.99	52.84
155.55	155.63	153.99	163.39	172.52	163.31	7.24	54.59
160.79	155.91	154.40	164.28	173.72	164.14	7.55	56.43
165.96	156.19	154.79	165.18	175.06	165.02	7.92	58.25
167.14	156.25	154.87	165.37	175.34	165.20	8.00	58.66
170.84	156.44	155.08	165.97	176.23	165.76	8.26	59.95
170.97	156.45	155.09	165.93	176.26	165.77	8.27	60.00
172.83	156.54	155.19	166.28	176.81	166.11	8.45	60.56
174.09	156.60	155.25	166.50	177.18	166.32	8.57	61.10
174.97	156.65	155.29	166.65	177.44	166.47	8.65	61.41
175.64	156.68	155.31	166.77	177.65	166.59	8.73	61.64
176.00	156.70	155.32	166.83	177.77	166.65	8.77	61.77
176.15	156.71	155.33	166.85	177.81	166.68	8.78	61.83
176.57	156.73	155.35	166.93	177.95	166.75	8.83	61.97
176.92	156.74	155.36	166.99	178.08	166.82	8.86	62.10
177.75	156.78	155.39	167.17	178.42	167.01	9.00	62.39
178.31	156.81	155.43	167.25	178.54	167.09	9.03	62.58
180.94	156.94	158.95	170.94	182.36	172.76	9.15	63.51
182.55	157.02	162.15	174.24	185.73	174.05	9.21	DIFF
185.00	157.13	169.50	181.72	193.31	181.53	9.30	DIFF
186.05	157.18	172.49	184.78	196.40	184.57	9.34	DIFF
187.00	157.22	175.46	187.83	199.49	187.61	9.39	DIFF

RUN NO. 76

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 5 GHz  
 POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: DETERMINED 4 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	123.27	123.15	123.30	123.46	123.30	0.12	0.35
5.06	127.66	127.57	127.72	127.88	127.72	0.12	1.76
10.43	132.64	132.61	132.76	132.91	132.76	0.12	3.66
14.34	135.18	135.19	135.34	135.49	135.34	0.12	5.03
20.83	138.29	138.36	138.51	138.66	138.51	0.12	7.31
25.90	140.14	140.26	140.41	140.57	140.42	0.12	9.09
30.85	141.63	141.81	141.96	142.12	141.96	0.12	10.83
35.76	142.90	143.14	143.29	143.44	143.29	0.12	12.55
40.69	144.01	144.31	144.46	144.61	144.46	0.12	14.28
45.80	145.03	145.39	145.54	145.69	145.54	0.12	16.08
50.67	145.94	146.35	146.51	146.67	146.51	0.12	17.85
55.80	146.74	147.21	147.37	147.54	147.37	0.13	19.58
60.89	147.49	148.03	148.20	148.37	148.20	0.14	21.37
65.75	148.16	148.74	148.93	149.13	148.93	0.15	23.08
70.79	148.80	149.42	149.65	149.90	149.65	0.19	24.84
75.63	149.37	149.98	150.31	150.65	150.32	0.26	26.54
80.97	149.96	150.44	151.03	151.63	151.03	0.47	28.42
85.83	150.47	150.50	151.71	152.91	151.70	0.34	30.12
90.93	150.97	150.26	152.38	154.49	152.38	1.65	31.91
95.99	151.44	150.09	152.96	155.79	152.95	2.22	33.69
100.76	151.86	150.03	153.44	156.85	153.44	2.66	35.36
105.90	152.29	150.13	154.14	158.10	154.13	3.11	37.17
110.88	152.69	150.54	155.05	159.53	155.04	3.51	38.92
115.99	153.08	150.98	156.07	161.07	156.04	3.94	40.71
120.73	153.43	151.37	156.91	162.36	156.88	4.29	42.37
125.71	153.78	151.79	157.91	163.80	157.84	4.69	44.12
130.97	154.13	152.22	158.86	165.25	158.78	5.09	45.97
135.85	154.45	152.61	159.81	166.66	159.70	5.49	47.68
140.91	154.77	153.00	160.72	168.04	160.59	5.88	49.45
145.77	155.06	153.36	161.64	169.40	161.48	6.27	51.16
150.55	155.34	153.71	162.48	170.76	162.33	6.66	52.84
155.55	155.63	154.07	163.39	172.18	163.22	7.08	54.59
160.79	155.91	154.41	164.28	173.68	164.13	7.53	56.43
165.96	156.19	154.73	165.18	175.20	165.05	8.00	58.25
167.14	156.25	154.80	165.37	175.51	165.23	8.03	58.66
170.84	156.44	154.98	165.92	176.49	165.80	8.40	59.96
170.97	156.45	154.98	165.93	176.52	165.82	8.41	60.00
172.83	156.54	155.10	166.28	177.03	166.15	8.57	60.66
174.09	156.60	155.18	166.50	177.35	166.35	8.66	61.10
174.97	156.65	155.23	166.65	177.58	166.50	8.73	61.41
175.64	156.68	155.27	166.77	177.76	166.61	8.79	61.64
176.00	156.70	155.29	166.83	177.86	166.67	8.82	61.77
176.15	156.71	155.30	166.85	177.90	166.69	8.83	61.83
176.57	156.73	155.32	166.93	178.02	166.77	8.87	61.97
176.92	156.74	155.34	166.99	178.14	166.83	8.91	62.10
177.22	156.76	155.35	167.09	178.31	166.93	8.97	62.20
178.31	156.81	155.43	167.25	178.54	167.09	9.03	62.58
180.94	156.94	159.61	171.60	183.02	171.43	9.15	63.51
181.96	156.99	161.96	174.01	185.48	173.53	9.19	D'FR
184.00	157.08	168.15	180.32	191.87	183.12	9.27	D'FR
185.00	157.13	171.18	183.40	194.99	183.21	9.30	D'FR
186.00	157.18	174.21	186.49	198.12	186.29	9.34	D'FR



RUN NO. 77

JOHNSON & GERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSJ.

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NM

TERRAIN DELTA: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: SPECIFIED AT 25 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	123.27	123.15	123.30	123.46	123.30	0.12	0.35
5.06	127.66	127.57	127.72	127.88	127.72	0.12	1.78
10.43	132.64	132.61	132.76	132.91	132.76	0.12	3.66
14.34	135.18	135.19	135.34	135.49	135.34	0.12	5.03
20.83	138.29	138.36	138.51	138.66	138.51	0.12	7.31
25.90	140.14	140.26	140.41	140.57	140.42	0.12	9.09
30.85	141.63	141.81	141.96	142.12	141.96	0.12	10.83
35.76	142.90	143.14	143.29	143.44	143.29	0.12	12.55
40.69	144.01	144.31	144.46	144.61	144.46	0.12	14.28
45.80	145.03	145.39	145.54	145.69	145.54	0.12	16.08
50.87	145.94	146.35	146.51	146.67	146.51	0.12	17.85
55.80	146.74	147.21	147.37	147.54	147.37	0.13	19.58
60.89	147.49	148.03	148.20	148.37	148.20	0.14	21.37
65.75	148.16	148.74	148.93	149.13	148.93	0.15	23.08
70.79	148.80	149.42	149.65	149.90	149.65	0.19	24.84
75.63	149.37	149.98	150.31	150.65	150.32	0.26	26.54
80.97	149.96	150.44	151.03	151.63	151.03	0.47	28.42
85.83	150.47	150.50	151.71	152.91	151.70	0.94	30.12
90.93	150.97	150.26	152.38	154.49	152.38	1.65	31.91
95.99	151.44	150.09	152.96	155.79	152.95	2.22	33.69
100.76	151.86	150.03	153.44	156.85	153.44	2.66	35.36
105.90	152.29	150.13	154.14	158.10	154.13	3.11	37.17
110.88	152.69	150.54	155.05	159.53	155.04	3.51	38.92
115.99	153.08	150.98	156.07	161.07	156.04	3.94	40.71
120.73	153.43	151.37	156.91	162.36	156.88	4.29	42.37
125.71	153.78	151.79	157.91	163.80	157.84	4.69	44.12
130.97	154.13	152.22	158.86	165.25	158.78	5.09	45.97
135.85	154.45	152.61	159.81	166.66	159.70	5.49	47.68
140.91	154.77	153.00	160.72	168.04	160.59	5.88	49.45
145.77	155.06	153.36	161.64	169.40	161.48	6.27	51.16
150.55	155.34	153.71	162.48	170.76	162.33	6.66	52.84
155.55	155.63	154.07	163.39	172.18	163.22	7.08	54.59
160.79	155.91	154.41	164.28	173.68	164.13	7.53	56.43
164.57	156.12	154.65	164.96	174.83	164.82	7.88	57.76
165.96	156.19	154.72	165.18	175.22	165.05	8.01	58.25
167.14	156.25	154.78	165.37	175.55	165.24	8.11	58.66
170.84	156.44	155.66	166.62	177.23	166.51	8.42	59.96
170.97	156.45	155.81	166.78	177.39	166.67	8.43	60.00
171.28	156.46	156.02	167.18	177.88	167.03	8.52	DIFR
174.00	156.60	162.65	174.01	184.80	173.84	8.66	DIFR
175.00	156.65	165.08	176.52	187.35	176.33	8.70	DIFR
176.00	156.70	167.51	179.04	189.69	178.83	8.75	DIFR
177.00	156.75	169.94	181.55	192.44	181.33	8.79	DIFR
178.00	156.80	172.38	184.06	195.01	183.83	8.84	DIFR
179.00	156.84	174.83	186.57	197.58	186.34	8.89	DIFR
180.00	156.89	177.27	189.08	200.14	188.85	8.93	DIFR

RUN NO. 78

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

OBST HT: SPECIFIED AT 50 FT ABOVE MSL

TERRAIN DELTA h: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 423 NMI

MINIMUM MONTHLY MEAN: 280 N UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOSS: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	123.27	123.15	123.30	123.46	123.30	0.12	0.35
5.06	127.66	127.57	127.72	127.88	127.72	0.12	1.78
10.43	132.64	132.61	132.76	132.91	132.76	0.12	3.66
14.34	135.18	135.19	135.34	135.49	135.34	0.12	5.03
20.83	138.29	138.36	138.51	138.66	138.51	0.12	7.31
25.90	140.14	140.26	140.41	140.57	140.42	0.12	9.09
30.85	141.63	141.81	141.96	142.12	141.96	0.12	10.83
35.76	142.90	143.14	143.29	143.44	143.29	0.12	12.55
40.69	144.01	144.31	144.46	144.61	144.46	0.12	14.28
45.80	145.03	145.39	145.54	145.69	145.54	0.12	16.08
50.87	145.94	146.35	146.51	146.67	146.51	0.12	17.85
55.80	146.74	147.21	147.37	147.54	147.37	0.13	19.58
60.89	147.49	148.03	148.20	148.37	148.20	0.14	21.37
65.75	148.16	148.74	148.93	149.13	148.93	0.15	23.08
70.79	148.80	149.42	149.65	149.90	149.65	0.19	24.84
75.63	149.37	149.98	150.31	150.65	150.32	0.26	26.54
80.97	149.96	150.44	151.03	151.63	151.03	0.47	28.42
85.83	150.47	150.50	151.71	152.91	151.70	0.94	30.12
90.93	150.97	150.26	152.38	154.49	152.38	1.65	31.91
95.99	151.44	150.09	152.96	155.79	152.95	2.22	33.69
100.76	151.86	150.03	153.44	156.85	153.44	2.66	35.36
105.90	152.29	150.13	154.14	158.10	154.13	3.11	37.17
110.88	152.69	150.54	155.05	159.53	155.04	3.51	38.92
115.99	153.08	150.98	156.07	161.07	156.04	3.94	40.71
120.73	153.43	151.37	156.91	162.36	156.88	4.29	42.37
125.71	153.78	151.79	157.91	163.80	157.84	4.69	44.12
130.97	154.13	152.22	158.86	165.25	158.76	5.09	45.97
135.85	154.45	152.61	159.81	166.66	159.70	5.49	47.68
140.91	154.77	153.00	160.72	168.04	160.59	5.88	49.45
145.77	155.06	153.36	161.64	169.40	161.48	6.27	51.16
150.55	155.34	153.71	162.48	170.76	162.33	6.66	52.84
155.55	155.63	154.07	163.39	172.18	163.22	7.08	54.59
160.79	155.91	154.41	164.28	173.68	164.13	7.53	56.43
164.57	156.12	154.65	164.96	174.83	164.82	7.88	57.76
165.96	156.19	154.72	165.18	175.22	165.05	8.01	58.25
167.14	156.25	154.78	165.37	175.55	165.24	8.11	58.66
170.84	156.44	155.66	166.62	177.23	166.51	8.42	59.96
170.97	156.45	155.81	166.78	177.39	166.67	8.43	60.00
171.28	156.46	156.08	167.18	177.88	167.06	8.52	DIFR
174.00	156.60	162.65	174.01	184.80	173.84	8.66	DIFR
175.00	156.65	165.08	176.52	187.35	176.33	8.70	DIFR
176.00	156.70	167.51	179.04	189.89	178.83	8.75	DIFR
177.00	156.75	169.94	181.55	192.44	181.33	8.79	DIFR
178.00	156.80	172.38	184.06	195.01	183.03	8.84	DIFR
179.00	156.84	174.83	186.57	197.50	186.34	8.89	DIFR
180.00	156.89	177.27	189.08	200.14	188.85	8.93	DIFR

RUN NO. 79

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL. TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL. TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI  
 TERRAIN ELEVATION AT SITE: 0 FT  
 TERRAIN DELTA h: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 OBSTACLE HT: DETERMINED AT 0 FT ABOVE MSL  
 CLIMATE: DESERT MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	129.29	129.14	129.35	129.56	129.35	0.16	0.35
5.06	133.68	132.33	133.78	135.52	133.87	1.25	1.79
10.43	138.67	136.17	138.85	142.70	139.21	2.57	3.70
14.34	141.20	136.31	141.45	146.27	141.97	3.13	5.08
20.83	144.31	141.11	144.67	150.42	145.35	3.67	7.38
25.90	146.16	142.90	146.60	152.76	147.37	3.90	9.18
30.85	147.65	144.38	148.18	154.62	149.00	4.05	10.94
35.76	148.92	145.66	149.54	156.18	150.40	4.16	12.68
40.69	150.03	146.81	150.74	157.53	151.63	4.24	14.42
45.80	151.05	147.86	151.86	158.74	152.76	4.30	16.23
50.87	151.96	148.81	152.87	159.82	153.77	4.35	18.03
55.80	152.76	149.67	153.77	160.78	154.68	4.39	19.78
60.89	153.51	150.50	154.63	161.70	155.55	4.43	21.58
65.75	154.18	151.24	155.41	162.51	156.32	4.46	23.31
70.79	154.82	151.97	156.17	163.32	157.09	4.49	25.09
75.63	155.39	152.63	156.87	164.07	157.79	4.53	26.81
80.97	155.98	153.31	157.64	164.92	158.56	4.59	28.70
85.83	156.49	153.87	158.36	165.77	159.27	4.70	30.42
90.93	156.99	154.27	159.08	166.71	159.96	4.90	32.23
95.99	157.46	154.55	159.70	167.55	160.55	5.12	34.03
100.76	157.88	154.79	160.24	168.28	161.05	5.31	35.72
105.90	158.31	155.29	161.08	169.30	161.84	5.50	37.54
110.88	158.71	155.98	162.08	170.46	162.79	5.68	39.30
115.99	159.10	156.69	163.15	171.68	163.80	5.87	41.11
120.73	159.45	157.32	164.09	172.73	164.67	6.04	42.79
125.71	159.80	157.99	165.12	173.84	165.62	6.20	44.56
130.97	160.15	158.67	166.20	175.03	166.60	6.40	46.42
135.85	160.47	159.28	167.19	176.12	167.51	6.58	48.15
140.91	160.79	159.88	168.22	177.27	168.44	6.80	49.95
145.77	161.08	160.40	169.18	178.44	169.33	7.05	51.67
150.55	161.36	160.89	170.15	179.68	170.24	7.34	53.37
155.55	161.65	161.30	171.11	181.11	171.17	7.74	55.14
160.79	161.93	161.70	172.13	182.69	172.17	8.20	56.99
165.78	162.20	162.21	173.06	183.86	173.05	8.46	58.76
170.70	162.45	162.71	173.95	184.95	173.87	8.69	60.51
172.81	162.56	162.93	174.36	185.44	174.25	8.80	61.25
174.98	162.67	163.14	174.77	185.92	174.62	8.90	62.02
176.00	162.72	163.24	174.95	186.17	174.80	8.96	62.39
176.15	162.73	163.26	174.98	186.21	174.83	8.97	62.44
176.92	162.76	163.34	175.14	186.42	174.97	9.02	62.71
177.47	162.79	163.39	175.28	186.62	175.11	9.07	62.91
177.89	162.81	163.44	175.35	186.71	175.17	9.09	63.05
178.22	162.83	163.47	175.40	186.78	175.23	9.11	63.17
178.48	162.84	163.49	175.44	186.33	175.27	9.12	63.27
178.71	162.85	163.51	175.48	186.88	175.30	9.13	63.35
178.99	162.86	163.54	175.52	186.94	175.35	9.14	63.44
179.62	162.90	163.60	175.62	187.07	175.44	9.17	63.67
181.00	162.96	164.99	177.09	198.60	176.91	9.22	64.16
182.55	163.04	169.30	181.48	193.05	181.29	9.28	DIFR
185.00	163.15	178.58	190.94	202.59	190.72	9.38	DIFR
186.00	163.20	182.36	194.79	206.48	194.56	9.42	DIFR
187.00	163.24	186.14	198.65	210.37	198.40	9.47	DIFR

188.00	163.29	189.9	202.51	214.25	202.24	9.51	DIFR
189.00	163.34	193.4	206.09	217.87	205.82	9.55	SCAT
190.00	163.38	195.02	207.74	219.57	207.46	9.59	SCAT

RUN NO. 80

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS. 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: DETERMINED AT 4 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N UNITS  
 SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	129.20	129.20	129.35	129.50	129.35	0.12	0.35
5.06	133.68	133.63	133.78	133.94	133.78	0.12	1.79
10.43	138.67	138.70	138.85	139.00	138.85	0.12	3.70
14.34	141.20	141.30	141.45	141.61	141.45	0.12	5.08
20.83	144.31	144.52	144.67	144.82	144.67	0.12	7.38
25.90	146.16	146.45	146.60	146.76	146.60	0.12	9.18
33.85	147.65	148.03	148.18	148.34	148.19	0.12	10.94
35.76	148.92	149.39	149.54	149.69	149.54	0.12	12.68
40.69	150.03	150.59	150.74	150.90	150.75	0.12	14.42
45.80	151.05	151.71	151.86	152.02	151.86	0.12	16.23
50.87	151.96	152.71	152.87	153.03	152.87	0.12	18.03
55.80	152.76	153.61	153.77	153.94	153.77	0.13	19.78
60.89	153.51	154.46	154.63	154.81	154.64	0.14	21.58
65.75	154.18	155.22	155.41	155.61	155.41	0.15	23.31
70.79	154.82	155.85	156.17	156.49	156.17	0.24	25.09
75.63	155.39	156.07	156.87	157.74	156.89	0.65	26.81
80.97	155.98	156.30	157.64	159.15	157.69	1.11	28.70
85.83	156.49	156.43	158.36	160.55	158.44	1.61	30.42
90.93	156.99	156.38	159.08	162.09	159.18	2.23	32.23
95.99	157.46	156.34	159.70	163.40	159.81	2.76	34.03
100.76	157.88	156.37	160.24	164.48	160.35	3.17	35.72
105.90	158.31	156.66	161.08	165.84	161.19	3.59	37.54
110.88	158.71	157.18	162.08	167.34	162.19	3.97	39.30
115.99	159.10	157.72	163.15	168.90	163.25	4.37	41.11
120.73	159.45	158.19	164.09	170.28	164.18	4.72	42.79
125.71	159.80	158.69	165.13	171.76	165.19	5.11	44.56
130.97	160.15	159.20	166.20	173.36	166.25	5.53	46.42
135.85	160.47	159.67	167.19	174.82	167.22	5.92	48.15
140.91	160.79	160.15	168.22	176.34	168.24	6.32	49.95
145.77	161.08	160.59	169.18	177.84	169.20	6.74	51.67
150.55	161.36	161.03	170.15	179.36	170.18	7.16	53.37
155.55	161.65	161.36	171.11	180.96	171.14	7.65	55.14
160.79	161.93	161.70	172.13	182.69	172.17	8.20	56.99
165.78	162.20	162.21	173.06	183.86	173.05	8.46	58.76
170.70	162.45	162.71	173.95	184.95	173.87	8.69	60.51
172.81	162.56	162.93	174.36	185.44	174.25	8.80	61.25
174.98	162.67	163.14	174.77	185.92	174.62	8.90	62.02
176.00	162.77	163.24	174.95	186.17	174.80	8.96	62.38
176.15	162.73	163.26	174.98	185.21	174.83	8.97	62.44
176.92	162.76	163.34	175.14	186.42	174.97	9.02	62.71
177.47	162.79	163.39	175.28	186.67	175.11	9.07	62.91
177.89	162.81	163.44	175.35	186.71	175.17	9.09	63.05
178.22	162.83	163.47	175.40	186.78	175.23	9.11	63.17
178.43	162.84	163.49	175.44	186.83	175.27	9.12	63.24
178.71	162.85	163.51	175.48	186.88	175.30	9.13	63.35
179.62	162.90	163.60	175.62	187.07	175.44	9.17	63.67
181.00	162.96	166.05	178.15	189.65	177.96	9.22	64.16
181.96	163.01	169.16	181.32	192.86	181.12	9.26	DIFR
184.00	163.10	176.97	189.24	200.86	189.04	9.33	DIFR
185.00	163.15	180.77	193.13	204.78	192.91	9.38	DIFR
186.00	163.20	184.57	197.01	208.70	196.78	9.42	DIFR

187.00	163.24	188.38	200.89	212.61	200.85	9.47	DIFR
188.00	163.28	192.19	204.78	216.53	204.62	9.61	DIFR
189.00	163.34	194.46	207.10	218.88	206.82	9.56	ECAT

RUN NO. 8 1

JOHNSON & GERRHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

FACTORY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.4 NMI

OBSTACLE HT: SPECIFIED AT 25 FT ABOVE MSL

TERRAIN DISTANCE: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MAXIMUM MONTHLY MEAN: 280 N-UNITS

CLIMATE DISTRICT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOSS: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	PUSH SPACE	10%	50%	90%	EXACTED VALUE	STD DEV	EFF DIST (NMI)
0.00	120.20	120.20	120.20	120.20	120.20	0.12	0.35
0.05	123.68	123.63	123.78	123.94	123.78	0.12	1.70
10.43	128.67	128.70	128.86	129.00	128.85	0.12	3.70
14.24	141.20	141.20	141.46	141.61	141.45	0.12	5.08
20.83	144.21	144.52	144.67	144.82	144.67	0.12	7.38
28.90	148.18	148.46	148.60	148.76	148.60	0.12	9.18
30.85	147.85	148.07	148.18	148.24	148.19	0.12	10.94
35.76	148.92	149.49	149.54	149.69	149.54	0.12	12.68
40.89	150.07	150.59	150.74	150.90	150.75	0.12	14.42
49.80	151.05	151.71	151.86	152.02	151.86	0.12	16.23
50.87	151.98	152.71	152.87	153.03	152.87	0.12	18.03
55.80	152.78	153.61	153.77	153.94	153.77	0.12	19.78
60.80	153.61	154.46	154.63	154.81	154.64	0.14	21.58
65.76	154.18	155.22	155.41	155.61	155.41	0.15	23.31
70.70	154.82	155.88	156.17	156.49	156.17	0.24	25.09
75.63	155.29	156.07	156.87	157.74	156.89	0.65	26.81
80.97	156.98	156.30	157.64	159.15	157.69	1.11	28.70
85.83	158.49	158.43	158.36	160.55	158.44	1.61	30.42
90.93	158.99	158.38	159.08	162.09	159.18	2.23	32.23
95.98	157.46	155.24	159.70	163.40	159.81	2.78	34.03
100.72	157.88	156.37	160.24	164.48	160.36	3.17	35.72
105.60	158.31	156.66	161.00	165.84	161.19	3.59	37.54
110.88	158.71	157.16	162.08	167.34	162.19	3.97	39.30
115.89	159.10	157.72	163.16	169.00	163.26	4.37	41.11
120.72	159.46	158.19	164.00	170.28	164.18	4.72	42.79
125.71	159.80	158.89	165.13	171.75	165.19	5.11	44.56
130.87	160.16	159.20	166.20	173.36	166.25	5.53	46.42
135.86	160.47	159.67	167.19	174.82	167.22	5.92	48.16
140.81	160.78	160.16	168.22	176.34	168.24	6.32	49.95
145.77	161.08	160.68	169.18	177.84	169.20	6.74	51.67
150.66	161.38	161.03	170.16	179.36	170.18	7.16	53.37
155.66	161.66	161.38	171.11	180.96	171.14	7.65	55.14
160.76	161.92	161.70	172.13	182.69	172.17	8.20	56.99
165.78	162.20	162.21	173.06	183.86	173.05	8.48	58.76
165.92	162.21	162.23	173.09	183.89	173.07	8.48	59.61
170.70	162.45	162.82	174.05	185.05	173.98	8.63	60.61
171.28	162.48	163.62	175.03	186.11	174.93	8.78	DIFF
174.00	162.82	170.60	182.23	193.41	182.09	8.91	DIFF
176.00	162.87	173.18	184.89	196.09	184.73	8.95	DIFF
176.00	162.72	176.75	187.54	198.86	187.37	9.00	DIFF
177.00	162.77	178.34	190.19	201.56	190.02	9.05	DIFF
178.00	162.82	180.92	192.84	204.21	192.67	9.10	DIFF
179.00	162.87	183.51	195.49	206.91	195.37	9.14	DIFF
180.00	162.91	186.10	198.16	209.61	197.96	9.18	DIFF

RUN NO. 82

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOSS: CONTRIBUTES TO VARIABILITY

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: SPECIFIED AT 50 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	129.29	129.20	129.35	129.50	129.35	0.12	0.35
5.06	133.68	133.63	133.78	133.94	133.78	0.12	1.79
10.43	138.67	138.70	138.65	139.00	138.85	0.12	3.70
14.34	141.20	141.30	141.45	141.61	141.45	0.12	5.08
20.83	144.31	144.52	144.67	144.82	144.67	0.12	7.38
25.90	146.16	146.45	146.60	146.76	146.60	0.12	9.18
30.95	147.65	148.03	148.18	148.34	148.19	0.12	10.94
35.76	148.92	149.39	149.54	149.69	149.54	0.12	12.68
40.69	150.03	150.59	150.74	150.90	150.75	0.12	14.42
45.80	151.05	151.71	151.86	152.02	151.86	0.12	16.23
50.87	151.96	152.71	152.87	153.03	152.87	0.12	18.03
55.80	152.76	153.61	153.77	153.94	153.77	0.13	19.78
60.89	153.51	154.46	154.63	154.81	154.64	0.14	21.58
65.75	154.18	155.22	155.41	155.61	155.41	0.15	23.31
70.79	154.82	155.86	156.17	156.49	156.17	0.24	25.09
75.63	155.39	156.07	156.87	157.74	156.89	0.65	26.81
80.97	155.98	156.30	157.64	159.15	157.69	1.11	28.70
85.83	156.49	156.43	158.36	160.55	158.44	1.61	30.42
90.93	156.99	156.36	159.08	162.09	159.18	2.29	32.23
95.99	157.46	156.34	159.70	163.40	159.81	2.76	34.03
100.76	157.88	156.37	160.24	164.48	160.35	3.17	35.72
105.90	158.31	156.66	161.08	165.84	161.19	3.59	37.54
110.88	158.71	157.18	162.08	167.34	162.19	3.97	39.30
115.99	159.10	157.72	163.15	168.90	163.25	4.37	41.11
120.73	159.45	158.19	164.09	170.28	164.18	4.72	42.79
125.71	159.80	158.69	165.13	171.76	165.19	5.11	44.56
130.97	160.15	159.20	166.20	173.36	166.25	5.53	46.42
135.31	160.44	159.62	167.08	174.66	167.12	5.88	47.96
135.65	160.47	159.67	167.19	174.82	167.22	5.92	48.15
140.91	160.79	160.15	168.22	176.34	168.24	6.32	49.95
144.42	161.00	161.83	170.42	178.80	170.36	6.63	DIFR
147.00	161.16	163.62	172.41	180.93	172.33	6.76	DIFR
148.00	161.21	164.31	173.19	181.76	173.09	6.82	DIFR
149.00	161.27	164.95	173.95	182.58	173.85	6.88	DIFR
150.00	161.33	165.63	174.74	183.41	174.60	6.95	DIFR
151.00	161.39	166.30	175.51	184.23	175.35	7.00	DIFR
152.00	161.45	166.97	176.29	185.08	176.13	7.07	DIFR
153.00	161.50	167.65	177.06	185.98	176.91	7.16	DIFR
154.00	161.56	168.32	177.84	186.87	177.69	7.25	DIFR
155.00	161.62	169.00	178.62	187.76	178.47	7.33	DIFR
156.00	161.67	169.69	179.39	188.65	179.25	7.41	DIFR
157.00	161.73	170.38	180.17	189.54	180.04	7.49	DIFR
158.00	161.78	171.06	180.95	190.43	180.82	7.57	DIFR
159.00	161.84	171.71	181.72	191.32	181.59	7.66	DIFR
160.00	161.89	172.36	182.50	192.21	182.37	7.75	DIFR
161.00	161.95	173.02	183.28	193.10	183.14	7.84	DIFR
162.00	162.00	173.69	184.06	193.98	183.92	7.93	DIFR
163.00	162.05	174.36	184.83	194.86	184.69	8.01	DIFR
164.00	162.11	175.03	185.61	195.74	185.47	8.09	DIFR
165.00	162.16	175.72	186.39	196.62	186.25	8.16	DIFR
166.00	162.21	176.40	187.17	197.49	187.03	8.24	DIFR



RUN NO. 83

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI

TERRAIN DELTA: 0 FT

CLIMATE: DESERT

SURFACE REFLECTION LOSS: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	132.81	132.69	132.90	133.12	132.90	0.16	0.35
5.06	137.20	135.91	137.36	139.09	137.45	1.25	1.80
10.43	142.19	139.78	142.46	146.32	142.83	2.57	3.71
14.34	144.73	141.96	145.10	149.91	145.62	3.13	5.11
20.83	147.83	144.81	148.37	154.12	149.06	3.67	7.42
25.90	149.68	146.65	150.35	156.51	151.12	3.90	9.23
30.85	151.17	148.17	151.98	158.41	152.80	4.05	10.99
35.76	152.44	149.50	153.38	160.01	154.24	4.16	12.74
40.69	153.55	150.69	154.63	161.42	155.52	4.24	14.49
45.80	154.57	151.79	155.79	162.67	156.69	4.30	16.31
50.87	155.48	152.79	156.85	163.80	157.75	4.35	18.12
55.80	156.28	153.70	157.80	164.81	158.71	4.39	19.88
60.89	157.04	154.58	158.72	165.78	159.63	4.43	21.69
65.75	157.70	155.37	159.55	166.66	160.46	4.46	23.42
70.79	158.34	156.14	160.37	167.55	161.29	4.51	25.21
75.63	158.91	156.84	161.13	168.39	162.06	4.56	26.94
80.57	159.50	157.59	161.06	169.32	162.89	4.63	28.84
85.83	160.01	158.21	162.75	170.23	163.67	4.75	30.57
90.93	160.51	158.67	163.54	171.25	164.43	4.86	32.39
95.99	160.98	159.03	164.24	172.17	165.09	5.17	34.19
100.76	161.40	159.34	164.85	172.96	165.66	5.35	35.89
105.90	161.83	159.98	165.82	174.09	166.58	5.54	37.72
110.88	162.23	160.76	166.92	175.36	167.63	5.73	39.49
115.99	162.62	161.56	168.08	176.68	168.73	5.92	41.31
120.73	162.97	162.28	169.13	177.85	169.71	6.10	43.00
125.71	163.32	163.03	170.27	179.10	170.76	6.29	44.7
130.97	163.68	163.82	171.47	180.45	171.88	6.50	46.65
135.85	163.99	164.51	172.56	181.71	172.90	6.73	48.39
140.91	164.31	165.21	173.74	183.08	173.99	6.98	50.19
145.77	164.60	165.79	174.81	184.52	175.03	7.32	51.92
150.55	164.88	166.33	175.94	185.13	176.12	7.73	53.62
155.55	165.17	167.01	177.02	187.40	177.14	7.97	55.40
160.79	165.46	167.73	178.23	188.82	178.26	8.24	57.27
165.69	165.72	168.39	179.28	190.11	179.26	8.49	59.01
170.41	165.96	169.02	180.31	191.32	180.22	8.71	60.70
174.98	166.19	169.64	181.33	192.53	181.17	8.94	62.32
175.90	166.24	169.76	181.53	192.78	181.37	8.99	62.65
176.57	166.27	169.85	181.67	192.97	181.51	9.03	62.89
177.48	166.31	169.98	181.92	193.30	181.75	9.11	63.21
178.06	166.34	170.06	182.04	193.45	181.86	9.14	63.42
178.48	166.36	170.11	182.12	193.55	181.94	9.15	63.57
178.81	166.38	170.16	182.18	193.63	182.00	9.17	63.69
179.07	166.39	170.19	182.23	193.69	182.05	9.18	63.78
179.28	166.40	170.22	182.27	193.74	182.09	9.19	63.86
179.45	166.41	170.24	182.31	193.78	182.12	9.19	63.92
179.51	166.41	170.25	182.32	193.79	182.13	9.20	63.94
180.18	166.44	170.34	182.44	193.95	182.26	9.22	64.18
181.00	166.48	170.49	182.64	194.18	182.45	9.26	64.47
182.55	166.56	175.71	187.94	195.54	187.74	9.31	DIFR
185.00	166.67	186.40	198.82	210.51	198.59	9.42	DIFR
186.00	166.72	190.76	203.26	214.98	203.02	9.46	DIFR
187.00	166.77	195.12	207.70	219.45	207.44	9.50	DIFR

RUN NO. 84

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 15 GHz

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HT: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA d: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 26.8 UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOSS: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	132.81	132.75	132.90	133.05	132.90	0.12	0.35
5.06	137.20	137.21	137.36	137.51	137.36	0.12	1.86
10.43	142.19	142.31	142.46	142.62	142.47	0.12	3.71
14.34	144.73	144.95	145.10	145.25	145.10	0.12	5.11
20.83	147.83	148.22	148.37	148.52	148.37	0.12	7.42
25.90	149.68	150.20	150.35	150.50	150.35	0.12	9.23
30.85	151.17	151.83	151.98	152.13	151.98	0.12	10.99
35.76	152.44	153.23	153.38	153.53	153.38	0.12	12.74
40.69	153.55	154.48	154.63	154.78	154.63	0.12	14.49
45.80	154.57	155.64	155.79	155.95	155.79	0.12	16.31
50.87	155.48	156.70	156.85	157.01	156.85	0.12	18.12
55.80	156.28	157.64	157.80	157.97	157.80	0.13	19.88
60.89	157.04	158.55	158.72	158.90	158.72	0.14	21.69
65.75	157.70	159.03	159.55	160.10	159.56	0.42	23.47
70.79	158.34	159.35	160.37	161.52	160.41	0.85	25.21
75.63	158.91	159.70	161.13	162.82	161.21	1.22	26.94
80.97	159.50	160.12	161.96	164.23	162.09	1.61	28.84
85.83	160.01	160.42	162.75	165.60	162.91	2.03	30.57
90.93	160.51	160.53	163.54	167.12	163.72	2.50	32.39
95.99	160.98	160.62	164.24	168.46	164.43	3.07	34.19
100.76	161.40	160.74	164.85	169.58	165.04	3.46	35.89
105.90	161.83	161.20	165.82	171.05	166.01	3.85	37.72
110.88	162.23	161.82	166.92	172.64	167.11	4.23	39.49
115.99	162.62	162.46	168.08	174.30	168.27	4.63	41.31
120.73	162.97	163.03	169.13	175.80	169.31	4.99	43.00
125.71	163.32	163.64	170.27	177.40	170.42	5.37	44.77
130.97	163.68	164.27	171.47	179.15	171.62	5.81	46.65
135.85	163.99	164.95	172.56	180.80	172.72	6.23	48.36
140.91	164.31	165.45	173.74	182.53	173.90	6.67	50.19
145.77	164.60	165.91	174.81	184.26	174.98	7.17	51.92
150.55	164.88	166.33	175.94	186.13	176.12	7.73	53.62
155.55	165.17	167.01	177.02	187.40	177.14	7.97	55.40
160.79	165.46	167.73	178.23	188.82	178.26	8.24	57.27
165.69	165.72	168.39	179.28	190.11	179.26	8.49	59.01
170.41	165.96	169.02	180.31	191.32	180.22	8.71	60.70
174.98	166.19	169.64	181.33	192.53	181.17	8.94	62.32
179.90	166.24	169.76	181.53	192.78	181.37	8.99	62.65
176.57	166.27	169.85	181.67	192.97	181.51	9.03	62.89
177.48	166.31	169.98	181.92	193.30	181.75	9.11	63.21
178.06	166.34	170.06	182.04	193.45	181.86	9.14	63.42
178.48	166.36	170.11	182.12	193.55	181.94	9.15	63.57
178.81	166.38	170.16	182.18	193.67	182.00	9.17	63.69
178.94	166.38	170.17	182.21	193.66	182.00	9.17	63.73
179.07	166.39	170.19	182.23	193.69	182.00	9.16	63.78
179.28	166.40	170.22	182.27	193.74	182.09	9.19	63.86
179.45	166.41	170.24	182.31	193.78	182.12	9.19	63.92
180.18	166.44	170.34	182.44	193.95	182.26	9.22	64.18
181.00	166.48	171.81	183.97	195.50	183.77	9.26	64.47
181.96	166.53	175.58	187.78	199.36	187.59	9.29	DIFR
184.00	166.63	184.55	196.90	208.55	196.68	9.38	DIFR
185.00	166.67	188.93	201.36	213.04	201.13	9.42	DIFR
186.00	166.72	193.32	205.82	217.54	205.57	9.46	DIFR

RUN NO. 85

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN DELTA: 50 FT

CLIMATE DISTRICT:

SURFACE REFLECTION COEFFICIENT CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: 127.0 EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBSTACLE HT: SPECIFIED AT 25 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	PLATEAU	1%	50%	90%	EXPECTED VALUE	STD DEV	HT DIST (NMI)
0.00	132.81		132.90	133.05	132.90	0.12	0.35
0.06	137.20	137.11	137.30	137.51	137.36	0.12	1.00
10.43	142.11	142.01	142.46	142.67	142.47	0.12	3.71
14.74	144.75	144.65	145.10	145.25	145.10	0.12	5.11
20.03	147.83	147.72	148.27	148.52	148.37	0.12	7.42
26.00	149.88	149.76	150.35	150.60	150.35	0.12	9.23
30.85	151.17	151.03	151.68	151.93	151.68	0.12	10.99
35.76	152.44	152.29	152.98	153.23	152.98	0.12	12.74
40.69	153.65	153.49	154.23	154.48	154.23	0.12	14.49
45.60	154.87	154.69	155.79	156.05	155.79	0.12	16.31
50.57	156.08	155.89	156.95	157.21	156.95	0.12	18.12
55.50	157.28	157.08	157.94	158.20	157.94	0.13	19.88
60.49	158.44	158.23	158.97	159.27	158.97	0.14	21.69
65.45	159.57	159.35	160.05	160.30	159.95	0.42	23.42
70.39	160.64	160.41	161.17	161.52	161.17	0.85	25.21
75.31	161.67	161.43	162.23	162.67	162.23	1.22	26.94
80.21	162.65	162.39	162.96	163.49	162.96	1.61	28.64
85.09	163.58	163.31	163.71	164.60	163.91	2.01	30.57
90.00	164.47	164.19	164.54	165.72	164.92	2.58	32.39
95.00	165.32	165.03	165.46	166.85	166.04	3.07	34.19
100.00	166.14	165.84	166.55	168.00	167.18	3.46	35.89
105.00	166.92	166.61	167.22	169.17	168.24	3.85	37.72
110.00	167.67	167.35	167.92	170.36	169.31	4.25	39.49
115.00	168.39	168.06	168.60	171.57	170.37	4.63	41.31
120.00	169.08	168.74	169.27	172.80	171.44	4.99	43.00
125.00	169.74	169.39	169.92	174.05	172.52	5.37	44.77
130.00	170.37	170.01	170.57	175.32	173.62	5.81	46.66
135.00	170.97	170.60	171.20	176.61	174.72	6.23	48.39
140.00	171.54	171.16	171.81	177.92	175.83	6.67	50.19
145.00	172.08	171.69	172.39	179.25	176.95	7.17	51.92
150.00	172.59	172.19	172.94	180.60	178.08	7.73	53.62
155.00	173.07	172.66	173.47	181.97	179.22	8.24	55.40
160.00	173.52	173.11	174.00	183.36	180.37	8.74	57.27
165.00	173.94	173.53	174.51	184.77	181.52	9.24	59.01
170.00	174.33	173.93	175.00	186.20	182.68	9.74	60.70
175.00	174.69	174.30	175.47	187.65	183.84	10.24	62.41
180.00	175.02	174.63	175.92	189.12	185.00	10.74	64.11
185.00	175.32	174.93	176.35	190.61	186.16	11.24	65.81
190.00	175.59	175.20	176.76	192.12	187.32	11.74	67.51
195.00	175.83	175.44	177.15	193.65	188.48	12.24	69.21
200.00	176.04	175.65	177.52	195.20	189.64	12.74	70.91
205.00	176.22	175.83	177.87	196.77	190.79	13.24	72.61
210.00	176.37	176.00	178.20	198.36	191.94	13.74	74.31
215.00	176.49	176.14	178.51	199.97	193.09	14.24	76.01
220.00	176.58	176.25	178.80	201.60	194.24	14.74	77.71
225.00	176.64	176.33	179.07	203.25	195.39	15.24	79.41
230.00	176.67	176.39	179.32	204.92	196.54	15.74	81.11
235.00	176.67	176.42	179.55	206.61	197.69	16.24	82.81
240.00	176.64	176.42	179.76	208.32	198.84	16.74	84.51
245.00	176.58	176.39	179.94	210.05	199.99	17.24	86.21
250.00	176.49	176.33	180.09	211.80	201.14	17.74	87.91
255.00	176.37	176.24	180.21	213.57	202.29	18.24	89.61
260.00	176.22	176.11	180.29	215.36	203.44	18.74	91.31
265.00	176.04	175.94	180.33	217.17	204.59	19.24	93.01
270.00	175.83	175.73	180.33	219.00	205.74	19.74	94.71
275.00	175.59	175.49	180.29	220.85	206.89	20.24	96.41
280.00	175.32	175.22	180.21	222.72	208.04	20.74	98.11
285.00	175.02	174.93	180.09	224.61	209.19	21.24	99.81
290.00	174.69	174.60	179.94	226.52	210.34	21.74	101.51
295.00	174.33	174.24	179.76	228.45	211.49	22.24	103.21
300.00	173.94	173.83	179.55	230.40	212.64	22.74	104.91
305.00	173.52	173.42	179.32	232.37	213.79	23.24	106.61
310.00	173.07	172.93	179.07	234.36	214.94	23.74	108.31
315.00	172.59	172.39	178.80	236.37	216.09	24.24	110.01
320.00	172.08	171.80	178.51	238.40	217.24	24.74	111.71
325.00	171.54	171.29	178.20	240.45	218.39	25.24	113.41
330.00	170.97	170.66	177.87	242.52	219.54	25.74	115.11
335.00	170.37	170.01	177.52	244.61	220.69	26.24	116.81
340.00	169.74	169.32	177.15	246.72	221.84	26.74	118.51
345.00	169.08	168.63	176.76	248.85	222.99	27.24	120.21
350.00	168.39	167.90	176.35	251.00	224.14	27.74	121.91
355.00	167.67	167.14	175.92	253.17	225.29	28.24	123.61
360.00	166.92	166.35	175.47	255.36	226.44	28.74	125.31
365.00	166.14	165.53	175.00	257.57	227.59	29.24	127.01
370.00	165.32	164.68	174.51	259.80	228.74	29.74	128.71
375.00	164.47	163.80	174.00	262.05	229.89	30.24	130.41
380.00	163.58	162.89	173.47	264.32	231.04	30.74	132.11
385.00	162.65	161.95	172.92	266.61	232.19	31.24	133.81
390.00	161.67	161.00	172.35	268.92	233.34	31.74	135.51
395.00	160.64	160.03	171.76	271.25	234.49	32.24	137.21
400.00	159.57	159.04	171.15	273.60	235.64	32.74	138.91
405.00	158.44	158.00	170.52	275.97	236.79	33.24	140.61
410.00	157.28	156.93	170.00	278.36	237.94	33.74	142.31
415.00	156.08	155.83	169.47	280.77	239.09	34.24	144.01
420.00	154.87	154.70	168.92	283.20	240.24	34.74	145.71
425.00	153.65	153.59	168.35	285.65	241.39	35.24	147.41
430.00	152.44	152.46	167.76	288.12	242.54	35.74	149.11
435.00	151.17	151.33	167.15	290.61	243.69	36.24	150.81
440.00	149.88	149.99	166.52	293.12	244.84	36.74	152.51
445.00	148.54	148.84	165.87	295.65	245.99	37.24	154.21
450.00	147.15	147.63	165.20	298.20	247.14	37.74	155.91
455.00	145.72	146.18	164.51	300.77	248.29	38.24	157.61
460.00	144.25	144.69	163.80	303.36	249.44	38.74	159.31
465.00	142.74	143.18	163.07	305.97	250.59	39.24	161.01
470.00	141.19	141.63	162.32	308.60	251.74	39.74	162.71
475.00	139.60	140.04	161.55	311.25	252.89	40.24	164.41
480.00	137.97	138.43	160.76	313.92	254.04	40.74	166.11
485.00	136.30	136.76	160.00	316.61	255.19	41.24	167.81
490.00	134.59	135.05	159.21	319.32	256.34	41.74	169.51
495.00	132.84	133.30	158.40	322.05	257.49	42.24	171.21
500.00	131.05	131.51	157.57	324.80	258.64	42.74	172.91

RUN NO. 86

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 22000 FT ABOVE MSL. TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL. TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT SURFACE TYPE: POOR GROUND  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
0.99	132.81	132.75	132.90	133.05	132.90	0.12	0.35
5.06	137.20	137.21	137.36	137.51	137.36	0.12	1.80
10.43	142.10	142.31	142.46	142.62	142.47	0.12	3.71
14.34	144.73	144.95	145.10	145.25	145.10	0.12	5.11
20.83	147.83	148.22	148.37	148.52	148.37	0.12	7.42
25.90	149.58	150.20	150.35	150.50	150.35	0.12	9.23
30.85	151.17	151.83	151.98	152.13	151.98	0.12	10.99
35.76	152.44	153.23	153.38	153.53	153.38	0.12	12.74
40.69	153.55	154.48	154.63	154.78	154.63	0.12	14.49
45.80	154.57	155.64	155.79	155.95	155.79	0.12	16.31
60.87	155.48	156.70	156.85	157.01	156.85	0.12	18.12
55.80	156.28	157.64	157.80	157.97	157.80	0.13	19.88
60.69	157.04	158.55	158.72	158.90	158.72	0.14	21.69
65.75	157.70	159.03	159.55	160.10	159.56	0.42	23.42
70.79	158.34	159.35	160.37	161.52	160.41	0.85	25.21
75.83	158.91	159.70	161.13	162.82	161.21	1.22	26.94
80.97	159.50	160.12	161.86	164.23	162.09	1.61	28.84
85.83	160.01	160.42	162.75	165.60	162.91	2.03	30.57
90.93	160.51	160.53	163.54	167.12	163.72	2.58	32.39
95.99	160.98	160.62	164.24	168.46	164.43	3.07	34.19
100.76	161.40	160.74	164.85	169.58	165.04	3.46	35.89
105.90	161.83	161.20	165.82	171.06	166.01	3.85	37.72
110.88	162.23	161.82	166.92	172.64	167.11	4.23	39.49
115.99	162.62	162.46	168.08	174.30	168.27	4.63	41.31
120.73	162.97	163.03	169.13	175.80	169.31	4.99	43.00
125.71	163.32	163.64	170.27	177.40	170.42	5.37	44.77
130.97	163.68	164.27	171.47	179.15	171.62	5.81	46.65
136.85	163.96	164.85	172.66	180.83	172.72	6.23	48.39
136.93	164.06	164.98	172.78	181.15	172.96	6.32	48.77
140.91	164.31	165.46	173.74	182.53	173.90	6.67	50.19
144.42	164.62	167.17	175.96	185.01	176.04	6.97	DIFR
147.00	164.68	169.14	178.12	187.30	178.18	7.09	DIFR
148.00	164.74	169.86	178.96	188.19	179.00	7.16	DIFR
149.00	164.79	170.69	179.81	189.08	179.02	7.22	DIFR
150.00	164.86	171.33	180.65	189.97	180.65	7.28	DIFR
151.00	164.91	172.08	181.49	190.85	181.40	7.33	DIFR
152.00	164.97	172.83	182.34	191.77	182.31	7.37	DIFR
153.00	165.02	173.57	183.18	192.71	183.15	7.41	DIFR
154.00	165.08	174.31	184.03	193.64	183.99	7.51	DIFR
155.00	165.14	175.06	184.87	194.57	184.84	7.62	DIFR
155.90	165.19	175.81	185.71	195.51	185.68	7.69	DIFR
157.00	165.25	176.57	186.57	196.44	186.53	7.76	DIFR
158.00	165.30	177.29	187.41	197.37	187.35	7.85	DIFR
159.00	165.36	178.09	188.26	198.30	188.19	7.95	DIFR
160.00	165.41	178.79	189.11	199.26	189.04	8.02	DIFR
161.00	165.47	179.47	189.96	200.21	189.89	8.10	DIFR
162.00	165.52	180.21	190.81	201.16	190.73	8.19	DIFR
163.00	165.57	180.96	191.66	202.10	191.56	8.25	DIFR
164.00	165.63	181.71	192.51	203.07	192.43	8.32	DIFR
165.00	165.60	182.49	193.36	203.96	193.27	8.37	DIFR
165.60	165.77	183.26	194.21	204.88	194.17	8.45	DIFR

RUN NO. 87

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI  
 TERRAIN DELTA E: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 2 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: DETERMINED AT 0 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	118.66	118.52	118.68	118.85	118.69	0.13	0.29
5.67	121.72	120.73	121.75	122.91	121.80	0.85	1.64
9.37	124.52	122.73	124.57	126.90	124.72	1.63	2.71
15.27	128.02	125.42	128.09	131.92	128.45	2.55	4.42
18.75	129.64	126.75	129.72	134.11	130.19	2.93	5.43
24.04	131.67	128.47	131.78	136.95	132.36	3.34	6.96
30.74	133.72	130.30	133.86	139.62	134.55	3.68	8.90
35.94	135.04	131.54	135.20	141.27	135.95	3.84	10.40
40.98	136.16	132.59	136.35	142.64	137.14	3.97	11.86
45.84	137.12	133.51	137.33	143.79	138.16	4.06	13.27
60.69	137.98	134.35	138.22	144.82	139.07	4.14	14.67
65.99	138.83	135.18	139.10	145.83	139.98	4.21	16.20
60.50	139.50	135.84	139.79	146.81	140.69	4.26	17.51
65.74	140.22	136.54	140.54	147.42	141.44	4.30	19.03
70.82	140.86	137.17	141.21	148.15	142.12	4.34	20.50
75.93	141.46	137.77	141.85	148.83	142.75	4.37	21.98
80.77	141.99	138.30	142.41	149.44	143.32	4.40	23.38
85.87	142.52	138.84	142.98	150.04	143.89	4.43	24.85
90.69	143.00	139.32	143.49	150.58	144.40	4.45	26.25
95.98	143.49	139.83	144.02	151.15	144.94	4.48	27.78
100.64	143.90	140.26	144.47	151.63	145.39	4.50	29.13
105.64	144.32	140.70	144.95	152.14	145.87	4.52	30.57
110.98	144.74	141.14	145.45	152.70	146.37	4.57	32.12
115.82	145.11	141.46	145.92	153.26	146.82	4.66	33.52
121.00	145.49	141.82	146.42	153.95	147.27	4.86	35.02
125.92	145.84	141.85	146.83	154.57	147.63	5.08	36.44
130.87	146.17	141.83	147.36	155.26	148.10	5.11	37.88
135.77	146.49	142.36	148.17	156.22	148.87	5.44	39.29
140.94	146.82	142.91	149.04	157.19	149.67	5.60	40.79
145.89	147.12	143.39	149.77	158.01	150.35	5.73	42.27
150.97	147.41	143.90	150.61	158.88	151.10	5.86	43.69
155.79	147.69	144.35	151.32	159.64	151.74	5.98	45.09
160.72	147.96	144.80	152.09	160.43	152.42	6.11	46.52
165.87	148.23	145.25	152.87	161.17	153.08	6.22	48.00
170.90	148.49	145.66	153.60	161.87	153.70	6.33	49.46
176.87	148.74	146.06	154.37	162.56	154.33	6.45	50.90
180.99	148.90	146.43	155.05	163.35	154.95	6.61	52.38
185.91	149.22	146.81	155.83	164.14	155.61	6.77	53.81
190.08	149.41	147.09	156.39	164.80	156.11	6.72	55.01
190.90	149.45	147.15	156.51	164.93	156.72	6.95	56.27
195.94	149.67	147.51	157.20	165.68	157.79	7.06	56.71
198.33	149.78	147.67	157.55	165.99	157.10	7.15	57.40
201.00	149.90	147.83	157.91	166.50	157.44	7.30	58.17
202.85	149.97	147.92	158.12	166.82	157.65	7.39	58.65
205.33	150.08	148.05	158.44	167.34	157.90	7.54	59.43
206.06	150.11	148.09	158.52	167.47	158.06	7.58	59.67
207.17	150.16	148.15	158.65	167.69	158.19	7.64	59.96
208.52	150.21	148.21	158.85	167.95	158.38	7.73	60.35
209.56	150.26	148.26	159.00	168.22	158.53	7.81	60.65
210.39	150.29	148.30	159.12	168.41	158.64	7.86	60.89
211.00	150.32	148.33	159.26	168.54	158.72	7.90	61.07
211.06	150.32	148.34	159.21	168.54	158.73	7.93	61.09
212.54	150.42	148.46	159.55	169.04	159.94	8.04	61.90

213.68	150.43	148.47	159.57	169.09	159.07	8.06	61.84
215.94	150.52	150.86	162.20	171.95	161.70	8.25	62.50
220.84	150.71	156.98	168.58	178.56	160.07	8.44	DIFR
223.00	150.80	161.74	173.45	183.51	172.93	8.51	DIFR
224.00	150.84	163.94	175.70	185.79	175.18	8.55	DIFR
225.00	150.87	166.15	177.95	188.08	177.43	8.58	DIFR
226.00	150.91	168.33	180.20	190.36	179.57	8.62	DIFR
227.00	150.95	170.51	182.45	192.65	181.90	8.66	DIFR
228.00	150.99	172.69	184.70	194.93	184.14	8.70	DIFR
229.00	151.03	174.88	186.95	197.21	186.38	8.73	DIFR

RUN NO. 8 8

JOHNSON & OIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

FREQUENCY: 2 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: DETERMINED 4 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	118.66	118.53	118.68	118.84	118.68	0.12	0.28
5.67	121.72	121.60	121.75	121.91	121.75	0.12	1.64
9.37	124.52	124.42	124.57	124.72	124.57	0.12	2.71
15.27	128.02	127.94	128.09	128.25	128.09	0.12	4.42
18.75	129.64	129.57	129.72	129.88	129.73	0.12	5.43
24.04	131.67	131.63	131.78	131.93	131.78	0.12	6.96
30.74	133.72	133.71	133.86	134.01	133.86	0.12	8.90
35.94	135.04	135.06	135.20	135.36	135.21	0.12	10.40
40.98	136.16	136.20	136.35	136.50	136.35	0.12	11.86
45.84	137.12	137.18	137.33	137.48	137.33	0.12	13.27
50.69	137.98	138.07	138.22	138.37	138.22	0.12	14.87
55.99	138.83	138.95	139.10	139.26	139.10	0.12	16.20
60.50	139.50	139.64	139.79	139.95	139.80	0.12	17.51
65.74	140.22	140.39	140.54	140.70	140.54	0.12	19.03
70.82	140.88	141.06	141.21	141.38	141.22	0.13	20.50
75.93	141.46	141.69	141.85	142.02	141.85	0.13	21.98
80.77	141.99	142.24	142.41	142.59	142.42	0.14	23.38
85.87	142.52	142.78	142.98	143.18	142.98	0.16	24.85
90.69	143.00	143.26	143.49	143.72	143.49	0.18	26.26
95.95	143.48	143.73	144.02	144.31	144.02	0.21	27.78
100.64	143.90	144.11	144.47	144.84	144.47	0.29	29.13
105.64	144.32	144.44	144.95	145.45	144.95	0.33	30.57
110.98	144.74	144.65	145.45	146.23	145.44	0.62	32.12
116.82	145.11	144.57	146.02	147.21	145.90	1.03	33.52
121.00	145.49	144.21	146.42	148.49	146.38	1.67	35.02
125.92	145.84	143.90	146.83	149.51	146.75	2.19	36.44
130.87	146.17	143.87	147.38	150.45	147.23	2.57	37.88
135.77	146.49	144.22	148.17	151.66	148.03	2.91	39.29
140.94	146.82	144.55	149.04	152.91	148.85	3.28	40.79
146.89	147.12	144.83	149.77	154.07	149.57	3.81	42.22
150.97	147.41	145.11	150.61	155.33	150.36	4.00	43.69
156.78	147.69	145.35	151.32	156.47	151.07	4.35	45.09
160.72	147.96	145.60	152.09	157.73	151.83	4.74	46.52
165.87	148.23	145.86	152.87	159.01	152.60	5.14	48.00
170.90	148.49	146.11	153.60	160.24	153.33	5.52	49.46
175.87	148.74	146.35	154.37	161.48	154.09	5.91	50.90
180.99	148.99	146.60	155.05	162.74	154.81	6.31	52.38
185.91	149.22	146.84	155.83	164.02	155.58	6.71	53.91
190.08	149.41	147.05	156.39	164.97	156.15	7.00	55.01
190.98	149.45	147.09	156.51	165.16	156.27	7.06	55.27
195.94	149.67	147.35	157.20	166.24	156.95	7.38	56.71
198.33	149.78	147.48	157.55	166.80	157.30	7.55	57.40
201.00	149.90	147.61	157.91	167.38	157.65	7.71	58.17
202.65	149.97	147.72	158.12	167.67	157.86	7.80	58.65
205.33	150.08	147.88	158.44	168.12	158.17	7.91	59.43
206.00	150.11	147.92	158.62	168.20	158.23	7.92	59.67
207.17	150.16	148.01	158.65	168.24	158.24	7.92	59.96
208.57	150.21	148.11	158.84	168.45	158.49	7.95	60.36
209.66	150.26	148.18	159.00	168.59	158.62	7.98	60.66
210.39	150.29	148.24	159.12	168.70	158.71	8.00	60.89
211.06	150.32	148.28	159.20	168.77	158.78	8.02	61.07
211.06	150.32	148.28	159.21	168.80	158.79	8.02	61.09
213.05	150.40	148.40	159.48	169.10	159.07	8.09	61.65

213.68	150.43	148.44	159.57	169.20	159.10	8.12	61.84
215.94	150.52	150.53	161.88	171.68	161.40	9.27	62.50
220.25	150.69	156.74	168.33	178.02	167.83	8.44	DIFR
223.00	150.80	162.87	174.59	184.69	174.08	8.53	DIFR
224.00	150.84	165.10	176.87	187.01	176.36	8.56	DIFR
225.00	150.87	167.34	179.15	189.32	178.64	8.60	DIFR
226.00	150.91	169.55	181.43	191.63	180.90	8.64	DIFR
227.00	150.95	171.75	183.70	193.94	183.17	8.68	DIFR
228.00	150.99	173.97	185.98	196.25	185.44	8.71	DIFR



RUN NO. 89

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

FREQUENCY: 2 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: SPECIFIED AT 25 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	118.66	118.53	118.68	118.84	118.68	0.12	0.29
5.67	121.72	121.60	121.75	121.91	121.75	0.12	1.64
9.37	124.52	124.42	124.57	124.72	124.57	0.12	2.71
15.27	128.02	127.94	128.09	128.25	128.09	0.12	4.42
18.75	129.64	129.57	129.72	129.88	129.73	0.12	5.43
24.64	131.67	131.63	131.78	131.93	131.78	0.12	6.96
30.74	133.72	133.71	133.86	134.01	133.86	0.12	8.99
35.94	135.04	135.06	135.20	135.36	135.21	0.12	10.40
40.98	136.16	136.20	136.35	136.50	136.35	0.12	11.86
45.84	137.12	137.18	137.33	137.49	137.33	0.12	13.27
50.69	137.98	138.07	138.22	138.37	138.22	0.12	14.67
55.99	138.83	138.95	139.10	139.26	139.10	0.12	16.20
60.50	139.50	139.64	139.79	139.95	139.80	0.12	17.51
65.74	140.22	140.39	140.54	140.70	140.54	0.12	19.03
70.82	140.86	141.06	141.21	141.38	141.22	0.13	20.50
75.93	141.45	141.69	141.85	142.02	141.85	0.13	21.98
80.77	141.99	142.24	142.41	142.59	142.42	0.14	23.38
85.87	142.52	142.78	142.98	143.19	142.98	0.16	24.85
90.69	143.00	143.26	143.49	143.72	143.49	0.18	26.25
95.96	143.49	143.73	144.02	144.31	144.02	0.23	27.78
100.64	143.90	144.11	144.47	144.84	144.47	0.29	29.13
105.64	144.32	144.44	144.95	145.45	144.95	0.39	30.57
110.98	144.74	144.65	145.45	146.23	145.44	0.62	32.12
116.82	145.11	144.57	145.92	147.21	145.90	1.03	33.52
121.00	145.49	144.21	146.42	148.49	146.38	1.67	35.02
125.92	145.84	143.90	146.83	149.51	146.75	2.19	36.44
130.87	146.17	143.87	147.36	150.45	147.23	2.57	37.88
135.77	146.49	144.22	148.17	151.66	148.03	2.91	39.28
140.94	146.82	144.55	149.04	152.93	148.85	3.28	40.79
145.99	147.12	144.89	149.77	154.07	149.57	3.61	42.22
150.97	147.41	145.11	150.61	155.33	150.36	4.00	43.69
155.79	147.69	145.35	151.32	156.47	151.07	4.35	45.09
160.72	147.96	145.60	152.09	157.73	151.83	4.74	46.52
165.87	148.23	145.86	152.87	159.01	152.60	5.14	48.00
170.90	148.49	146.11	153.60	160.24	153.33	5.52	49.48
175.87	148.74	146.35	154.37	161.48	154.09	5.91	50.90
180.99	148.99	146.59	155.05	162.74	154.81	6.31	52.38
185.91	149.22	146.84	155.83	164.02	155.58	6.71	53.81
190.98	149.41	147.05	156.39	164.97	156.15	7.00	55.01
195.94	149.45	147.09	156.51	165.16	156.27	7.06	55.27
199.94	149.67	147.35	157.20	166.24	156.95	7.38	56.71
198.33	149.78	147.48	157.55	166.80	157.30	7.56	57.40
201.00	149.90	147.63	157.91	167.36	157.85	7.71	58.17
202.65	149.97	147.72	158.12	167.67	157.88	7.80	58.66
205.33	150.08	147.88	158.44	168.12	158.17	7.91	59.43
206.09	150.11	147.92	158.52	168.20	158.23	7.92	59.67
207.17	150.16	148.01	158.65	168.29	158.34	7.97	59.96
207.17	150.16	148.01	158.65	168.29	158.34	7.97	59.96
208.62	150.21	148.11	158.85	168.46	158.50	7.95	60.35
209.56	150.26	151.99	162.81	172.41	162.47	7.98	60.85
209.57	150.26	151.99	162.83	172.50	162.44	8.05	DIFF
212.00	150.36	157.30	168.42	178.16	167.99	8.15	DIFF
213.00	150.40	169.53	175.71	186.49	176.27	8.19	DIFF

214.00	150.44	161.76	173.01	182.81	172.56	8.23	DIFR
215.00	150.48	163.99	175.31	185.15	174.85	8.27	DIFR
216.00	150.52	166.23	177.60	187.50	177.14	8.32	DIFR
217.00	150.56	168.47	179.90	189.84	179.43	8.36	DIFR

RUN NO. 90

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA h: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

FREQUENCY: 2 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBSTACLE HT: SPECIFIED AT 50 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	118.66	118.53	118.68	118.84	118.68	0.12	0.29
5.67	121.72	121.60	121.75	121.91	121.75	0.12	1.64
9.37	124.52	124.42	124.57	124.72	124.57	0.12	2.71
15.27	128.02	127.94	128.09	128.25	128.09	0.12	4.42
18.75	129.64	129.57	129.72	129.88	129.73	0.12	5.43
24.04	131.67	131.63	131.78	131.93	131.78	0.12	6.96
30.74	133.72	133.71	133.86	134.01	133.86	0.12	8.90
35.94	135.04	135.06	135.20	135.36	135.21	0.12	10.40
40.98	136.16	136.20	136.35	136.50	136.35	0.12	11.86
45.84	137.12	137.18	137.33	137.49	137.33	0.12	13.27
50.69	137.98	138.07	138.22	138.37	138.22	0.12	14.67
55.49	138.63	138.95	139.10	139.26	139.10	0.12	16.20
60.50	139.50	139.64	139.79	139.95	139.80	0.12	17.51
65.74	140.22	140.39	140.54	140.70	140.54	0.12	19.03
70.82	140.86	141.06	141.21	141.38	141.22	0.13	20.50
75.93	141.46	141.69	141.85	142.02	141.85	0.13	21.98
80.77	141.99	142.24	142.41	142.59	142.42	0.14	23.38
85.87	142.52	142.78	142.98	143.18	142.98	0.16	24.85
90.69	143.00	143.26	143.49	143.72	143.49	0.18	26.25
95.98	143.49	143.73	144.02	144.31	144.02	0.23	27.78
100.64	143.90	144.11	144.47	144.84	144.47	0.29	29.13
105.64	144.32	144.44	144.95	145.45	144.95	0.39	30.57
110.98	144.74	144.65	145.45	146.23	145.44	0.62	32.12
115.82	145.11	144.57	145.92	147.21	145.90	1.03	33.52
121.00	145.49	144.71	146.42	148.49	146.38	1.67	35.02
125.92	145.84	143.90	146.83	149.51	146.75	2.19	36.44
130.87	146.17	143.87	147.36	150.45	147.23	2.67	37.88
135.77	146.49	144.22	148.17	151.66	148.03	2.91	39.29
140.94	146.82	144.55	149.04	152.93	148.85	3.28	40.79
145.89	147.12	144.83	149.77	154.07	149.57	3.61	42.22
150.97	147.41	145.11	150.61	155.33	150.38	4.00	43.69
155.79	147.69	145.35	151.32	156.47	151.07	4.35	45.09
160.72	147.96	145.60	152.09	157.73	151.83	4.74	46.62
163.87	148.12	145.76	152.58	158.53	152.31	4.99	47.43
165.87	148.23	145.86	152.87	159.02	152.66	5.15	48.00
170.90	148.40	146.09	153.60	160.29	153.35	5.55	49.46
176.87	148.74	147.83	156.87	163.00	155.01	5.96	50.90
180.99	148.69	160.23	158.73	166.58	156.52	6.39	52.38
182.16	149.04	160.56	160.38	167.42	159.14	6.59	DIFF
185.00	149.10	152.59	161.67	169.83	161.38	6.73	DIFF
188.00	149.22	153.32	162.47	170.67	162.17	6.78	DIFF
187.00	149.27	154.05	163.28	171.61	162.97	6.83	DIFF
188.00	149.32	164.78	164.08	172.36	163.75	6.87	DIFF
189.00	149.36	155.52	164.89	173.20	164.56	6.91	DIFF
190.00	149.41	156.26	165.69	174.04	165.35	6.95	DIFF
191.00	149.45	167.00	166.50	174.88	166.15	6.99	DIFF
192.00	149.50	157.74	167.30	175.72	166.95	7.03	DIFF
193.00	149.54	158.49	168.11	176.56	167.74	7.06	DIFF
194.00	149.59	159.21	168.91	177.39	168.53	7.11	DIFF
195.00	149.63	159.92	169.72	178.23	169.32	7.16	DIFF
196.00	149.68	160.62	170.52	179.07	170.11	7.21	DIFF
197.00	149.72	161.35	171.33	179.92	170.91	7.28	DIFF
198.00	149.77	162.06	172.13	180.90	171.73	7.36	DIFF

RUN NO. 91

JOHNSON & O'BRIEN

AIRCRAFT ALTITUDE 3300 FT ABOVE MSL

FACILITY ANTENNA HEIGHT 3 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE DETERMINED AT 34 NM

TERRAIN DATA 0 FT REFRACTIVITY EFFECTIVE EARTH RADII 4275 MI

CLIMATE DESERT

SURFACE REFLECTION LOSS CONTRIBUTES TO VARIABILITY

TYPE ISOTROPIC

TYPE ISOTROPIC

FREQUENCY 2012

POLARIZATION CIRCULAR

TERRAIN ELEVATION AT 34 NM 0 FT

HEIGHT DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN 200 K UNITS

SURFACE TYPE DROUGHT

TIME AVAILABILITY FOR INSTANTANEOUS (EM) EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NM)	FREE SPACE	10%	50%	90%	EXACTED VALUE	STD DEV	10% DIST (NM)
1.00	118.56	118.62	118.69	118.86	118.60	0.13	0.79
5.66	121.72	120.73	121.76	122.91	121.80	0.85	1.66
9.37	124.62	122.73	124.67	126.90	124.72	1.03	2.75
16.26	128.02	125.42	128.09	131.92	128.46	2.86	4.48
18.75	129.64	126.76	129.72	134.18	130.19	2.93	6.61
24.05	131.67	128.48	131.78	138.90	132.36	3.34	7.06
30.74	133.72	130.30	135.66	139.62	134.55	3.80	9.03
35.95	135.04	131.64	135.21	141.27	135.95	3.85	10.66
40.98	136.16	132.60	136.35	142.64	137.14	3.97	12.04
46.84	137.12	133.61	137.33	143.79	138.16	4.06	13.46
50.89	137.98	134.35	138.22	144.82	139.07	4.14	14.89
55.98	138.83	135.18	139.10	146.83	139.98	4.21	16.44
60.60	139.50	135.84	139.80	146.61	140.89	4.26	17.77
65.75	140.22	136.54	140.64	147.42	141.44	4.31	19.31
70.82	140.86	137.17	141.21	148.15	142.12	4.34	20.80
75.93	141.46	137.77	141.85	148.83	142.76	4.38	22.30
80.77	141.99	138.30	142.41	149.44	143.32	4.40	23.72
85.87	142.52	138.84	142.98	150.04	143.89	4.41	25.22
90.62	143.00	139.32	143.49	150.58	144.40	4.46	26.63
95.99	143.49	139.82	144.02	151.16	144.94	4.48	28.19
100.14	143.96	140.21	144.42	151.58	145.34	4.50	29.41
100.94	143.92	140.20	144.50	151.66	145.42	4.50	29.64
105.80	144.33	140.79	144.96	152.06	145.87	4.46	31.07
110.97	144.72	141.41	145.46	152.31	146.33	4.31	32.59
115.82	145.12	141.92	145.92	152.36	146.68	4.12	34.01
121.00	145.49	142.27	146.41	152.38	146.98	3.97	35.53
126.00	145.85	142.63	146.83	152.22	147.17	3.80	37.00
128.05	145.86	142.63	146.83	152.22	147.17	3.78	37.32
130.87	146.17	143.03	147.48	152.30	147.60	3.64	38.43
135.78	146.49	143.73	148.32	152.86	148.30	3.57	39.87
140.95	146.82	144.32	149.17	153.81	149.04	3.63	41.39
142.99	146.84	144.51	149.48	153.94	149.32	3.69	41.99
145.92	147.12	144.76	149.96	154.51	149.76	3.61	42.85
150.90	147.41	145.11	150.78	155.58	150.61	4.09	44.34
154.71	147.63	145.34	151.32	156.49	151.04	4.32	45.43
156.96	147.79	145.42	151.50	156.88	151.22	4.40	45.50
160.94	147.97	145.70	152.7	157.91	152.00	4.77	47.26
163.23	148.00	145.83	152.66	158.4	152.33	4.93	47.94
165.98	148.24	146.98	153.04	159.61	152.70	5.10	48.74
169.70	148.43	146.17	153.84	159.7	153.27	6.38	49.84
170.96	148.49	146.26	153.85	160.1	153.46	6.46	50.21
174.76	148.68	146.46	154.40	161.36	154.00	6.71	51.32
176.90	148.74	146.62	154.67	161.34	154.17	6.80	51.88
178.81	148.88	146.80	154.95	161.97	154.66	6.99	52.51
181.00	148.99	146.78	155.22	162.62	154.99	6.16	53.16
182.13	149.04	146.84	155.49	162.79	155.07	6.24	53.49
185.90	149.22	147.06	156.03	163.61	155.99	6.48	54.59
190.90	149.45	148.62	157.50	165.82	157.44	6.76	56.06
194.72	149.62	149.00	159.66	167.87	159.17	7.03	57.19
196.96	149.60	150.43	160.29	168.62	159.81	7.11	57.56
201.00	149.90	153.06	163.26	172.09	162.78	7.43	59.03
205.91	150.11	156.63	167.17	176.28	166.69	7.72	60.47

206.00	150.11	156.60	167.25	176.36	166.77	7.73	60.50
211.00	150.32	160.76	171.84	181.29	171.33	8.03	61.97
216.46	150.56	164.46	175.95	185.81	175.44	8.35	63.27
217.67	150.69	166.25	177.65	187.81	177.34	8.45	DIFR
220.00	150.88	171.64	183.41	193.47	182.89	8.52	DIFR
221.00	150.72	173.80	185.66	195.75	185.14	8.55	DIFR
222.00	150.76	176.09	187.91	198.04	187.38	8.58	DIFR
223.60	150.86	178.27	190.16	200.32	189.62	8.62	DIFR
224.00	150.84	180.46	192.41	202.61	191.86	8.66	DIFR
225.00	150.87	182.64	194.66	204.89	194.10	8.70	DIFR

RUN NO. 92

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 2 GHz

POLARIZATION: CIRCULAR

FACILITY ANTENNA HEIGHT: 3 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

OBSTACLE DETERMINED AT 4 FT ABOVE MSL

TERRAIN DISTANCE: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4425 NMI

MINIMUM MONTHLY MEAN: 280 N UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	118.66	118.54	118.69	118.84	118.69	0.12	0.29
5.66	121.72	121.61	121.75	121.91	121.76	0.12	1.66
9.27	124.52	124.42	124.57	124.72	124.57	0.12	2.75
15.26	128.02	127.94	128.08	128.25	128.09	0.12	4.48
18.75	129.64	129.57	129.72	129.88	129.73	0.12	5.51
24.05	131.67	131.63	131.78	131.93	131.78	0.12	7.06
30.74	133.72	133.71	133.86	134.01	133.86	0.12	9.03
35.95	135.04	135.06	135.21	135.36	135.21	0.12	10.56
40.98	136.16	136.20	136.35	136.50	136.35	0.12	12.04
45.84	137.12	137.18	137.33	137.49	137.33	0.12	13.46
50.69	137.98	138.07	138.22	138.37	138.22	0.12	14.89
55.98	138.83	138.95	139.10	139.26	139.10	0.12	16.44
60.50	139.50	139.64	139.80	139.95	139.80	0.12	17.77
65.75	140.22	140.39	140.54	140.70	140.54	0.12	19.31
70.82	140.86	141.06	141.21	141.38	141.22	0.13	20.80
75.93	141.46	141.68	141.85	142.02	141.85	0.13	22.30
80.77	141.98	142.24	142.41	142.59	142.42	0.14	23.72
85.87	142.52	142.78	142.98	143.18	142.98	0.16	25.22
90.69	143.00	143.25	143.49	143.73	143.49	0.19	26.63
95.99	143.49	143.73	144.02	144.32	144.02	0.23	28.19
100.14	143.86	144.06	144.42	144.73	144.43	0.28	29.41
100.94	143.92	144.12	144.50	144.88	144.50	0.30	29.64
105.80	144.33	144.44	144.95	145.48	144.96	0.40	31.07
110.97	144.74	144.83	145.45	146.24	145.44	0.63	32.59
115.62	145.12	144.52	145.92	147.24	145.89	1.06	34.01
121.00	145.49	144.14	146.41	148.53	146.36	1.72	35.53
126.00	145.85	143.79	146.83	149.57	146.74	2.26	37.00
126.05	145.85	143.78	146.83	149.58	146.74	2.27	37.02
130.87	146.17	143.87	147.46	150.64	147.33	2.65	38.43
135.78	146.49	144.22	148.32	151.91	148.16	3.01	39.87
140.95	146.82	144.55	149.17	153.16	148.98	3.37	41.59
147.99	146.94	144.68	149.48	153.63	149.28	3.50	41.99
147.92	147.12	144.84	149.95	154.35	149.73	3.72	42.35
150.98	147.41	145.11	150.78	155.58	150.51	4.09	44.34
154.71	147.63	145.31	151.32	156.47	151.05	4.37	45.43
155.96	147.70	145.37	151.50	156.77	151.23	4.46	45.80
160.94	147.97	145.63	152.32	158.08	152.03	4.87	47.26
163.23	148.09	145.75	152.66	158.64	152.37	5.04	47.94
165.98	148.24	145.88	153.04	159.28	152.75	5.24	48.74
169.70	148.43	146.07	153.64	160.23	153.33	5.54	49.84
170.98	148.49	146.13	153.85	160.55	153.53	5.64	50.21
174.75	148.88	146.32	154.40	161.49	154.09	5.93	51.32
175.93	148.74	146.38	154.57	161.79	154.27	6.03	51.68
178.81	149.88	146.51	154.95	162.49	154.67	6.24	52.51
181.06	149.99	146.62	155.32	163.08	155.03	6.43	53.15
182.13	149.54	146.68	155.49	163.38	155.26	6.53	53.49
185.06	149.22	146.87	156.03	164.28	155.74	6.81	54.59
190.98	149.45	147.11	156.68	165.36	156.41	7.14	56.01
194.72	149.62	147.31	157.27	166.32	156.99	7.43	57.19
195.98	149.18	147.38	157.45	166.62	157.17	7.52	57.56
201.06	149.90	147.64	158.10	167.68	157.62	7.83	59.07
203.60	150.01	148.01	158.62	168.34	158.34	7.94	59.79

206.00	150.11	150.91	161.69	171.37	161.34	8.00	60.50
211.00	150.32	156.98	168.10	177.68	167.62	8.10	61.97
212.61	150.38	158.83	170.16	179.90	169.67	8.24	DIFR
215.00	150.48	165.78	177.25	187.10	176.74	8.34	DIFR
216.00	150.52	168.69	180.21	190.11	179.70	8.38	DIFR
217.00	150.56	171.59	183.17	193.11	182.66	8.41	DIFR
218.00	150.60	174.50	186.13	196.11	185.62	8.45	DIFR
219.00	150.64	177.41	189.09	199.11	188.57	8.49	DIFR
220.00	150.68	180.32	192.05	202.11	191.53	8.52	DIFR

RUN NO. 93

JOINSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 5 GHz

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 54 NMI

TERRAIN ELEVATION AT SITE: 0 FT

TERRAIN DELTA E: 0 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

OBST HT. DETERMINED AT 0 FT ABOVE MSL

CLIMATE: DESERT

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFP DIST (NMI)
1.00	126.62	126.49	126.66	126.83	126.66	0.13	0.29
6.67	129.68	128.71	129.73	130.89	129.77	0.85	1.66
9.37	132.48	130.72	132.56	134.88	132.71	1.63	2.75
15.27	135.98	133.42	136.09	139.92	136.45	2.55	4.48
18.75	137.60	134.76	137.73	142.19	138.20	2.93	5.50
24.04	139.62	136.50	139.80	144.98	140.39	3.34	7.06
30.74	141.68	138.34	141.90	147.67	142.59	3.66	9.02
35.94	143.00	139.59	143.26	149.33	144.01	3.84	10.55
40.98	144.12	140.67	144.42	150.71	145.21	3.97	12.03
45.84	145.07	141.60	145.41	151.88	146.24	4.06	13.46
50.69	145.94	142.45	146.32	152.92	147.17	4.14	14.88
55.99	146.79	143.00	147.22	153.95	148.09	4.21	16.43
60.50	147.46	143.97	147.92	154.74	148.81	4.26	17.76
65.74	148.18	144.68	148.68	155.56	149.58	4.30	19.30
70.82	148.82	145.00	149.37	156.31	150.28	4.34	20.79
75.93	149.42	145.95	150.02	157.01	150.93	4.37	22.29
80.77	149.95	146.50	150.61	157.63	151.52	4.40	23.71
85.87	150.48	147.05	151.19	158.25	152.10	4.43	25.21
90.69	150.96	147.55	151.71	158.81	152.63	4.45	26.62
95.98	151.45	148.07	152.27	159.40	153.18	4.48	28.17
100.64	151.86	148.52	152.74	159.90	153.66	4.50	29.54
105.64	152.28	148.98	153.23	160.43	154.15	4.52	31.01
110.98	152.70	149.44	153.76	161.00	154.67	4.57	32.58
115.82	153.07	149.77	154.25	161.59	155.14	4.67	34.00
121.00	153.45	149.92	154.76	162.33	155.61	4.89	35.52
125.92	153.80	149.93	155.20	162.99	155.99	5.14	36.96
130.87	154.13	150.23	155.86	163.85	156.60	5.35	38.42
135.77	154.45	150.79	156.74	164.90	157.43	5.54	39.85
140.94	154.78	151.34	157.62	165.91	158.25	5.71	41.37
145.89	155.07	151.85	158.42	166.80	158.98	5.85	42.82
150.97	155.37	152.38	159.27	167.70	159.75	5.99	44.31
155.79	155.64	152.84	159.99	168.51	160.42	6.13	45.73
160.72	155.91	153.34	160.85	169.40	161.17	6.28	47.18
165.87	156.19	153.81	161.62	170.23	161.87	6.42	48.69
170.90	156.45	154.26	162.46	171.03	162.57	6.55	50.17
175.87	156.70	154.66	163.20	171.85	163.24	6.71	51.62
180.97	156.94	155.07	164.00	172.75	163.94	6.91	53.12
185.69	157.17	155.43	164.72	173.81	164.60	7.11	54.51
190.58	157.39	155.77	165.38	174.47	165.22	7.31	55.94
195.66	157.62	156.11	166.20	175.56	165.97	7.60	57.43
200.97	157.85	156.44	166.93	176.73	166.71	7.93	58.99
205.30	158.04	156.69	167.51	177.65	167.20	8.19	60.27
206.00	158.07	156.73	167.61	177.79	167.39	8.23	60.47
209.07	158.20	156.87	168.07	178.53	167.84	8.46	61.37
210.98	158.28	156.95	168.34	178.99	168.11	8.61	61.93
211.06	158.28	156.95	168.35	179.01	168.12	8.62	61.95
212.33	158.33	157.00	168.52	179.33	168.30	8.73	62.33
213.22	158.37	157.03	168.64	179.57	168.43	8.81	62.59
213.88	158.39	157.05	168.73	179.77	168.53	8.88	62.76
214.40	158.41	157.06	168.81	179.92	168.61	8.93	62.83
214.82	158.43	157.07	168.87	180.05	168.68	8.98	63.06
215.17	158.45	157.08	168.92	180.17	168.74	9.02	63.16



216.00	158.48	157.10	169.08	180.47	168.90	9.13	63.40
216.04	158.48	157.11	169.08	180.48	168.90	9.13	63.41
216.56	158.50	157.14	169.14	180.57	168.96	9.15	63.57
220.84	158.67	163.74	175.94	187.52	175.75	9.29	
222.00	158.76	170.21	182.54	194.18	182.32	9.37	
224.00	158.80	173.19	185.59	197.26	185.36	9.40	
225.00	158.83	176.17	188.64	200.33	188.40	9.44	
226.00	158.87	179.16	191.68	203.41	191.43	9.47	
227.00	158.91	182.15	194.73	206.48	194.47	9.51	
228.00	158.95	185.14	197.78	209.55	197.51	9.54	

JOHNSON, GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 3 GHz

FACTOR: ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

TERRAIN ELEVATION AT SITE: 0 FT

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

CLEARANCE: DETERMINED AT 4 FT ABOVE MSL

TERRAIN DELTA h: 0 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

MINIMUM MONTHLY MEAN: 280 N UNITS

CLIMATE: DESERT

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	
1.00	126.62	126.51	126.66	126.81	126.66	0.12	0.29
5.67	129.68	129.58	129.73	129.89	129.73	0.12	1.66
9.37	132.48	132.41	132.56	132.71	132.56	0.12	2.75
15.27	135.98	135.94	136.09	136.25	136.10	0.12	4.48
18.75	137.60	137.59	137.73	137.89	137.74	0.12	5.50
24.04	139.62	139.65	139.80	139.95	139.80	0.12	7.06
30.74	141.66	141.75	141.90	142.05	141.90	0.12	9.02
35.94	143.00	143.11	143.26	143.42	143.26	0.12	10.55
40.98	144.12	144.27	144.42	144.57	144.42	0.12	12.03
45.84	145.07	145.26	145.41	145.57	145.42	0.12	13.46
50.69	145.94	146.17	146.32	146.47	146.32	0.12	14.88
55.99	146.79	147.06	147.22	147.37	147.22	0.12	16.43
60.50	147.46	147.77	147.92	148.08	147.92	0.12	17.76
65.74	148.18	148.53	148.68	148.84	148.69	0.12	19.30
70.82	148.82	149.22	149.37	149.54	149.38	0.13	20.79
75.93	149.42	149.86	150.02	150.20	150.03	0.13	22.29
80.77	149.95	150.43	150.61	150.79	150.61	0.14	23.71
85.87	150.40	151.00	151.19	151.39	151.19	0.15	25.21
90.69	150.96	151.50	151.71	151.94	151.72	0.17	26.62
95.90	151.45	152.00	152.27	152.54	152.27	0.21	28.17
100.64	151.86	152.40	152.74	153.08	152.74	0.27	29.54
105.64	152.28	152.75	153.23	153.70	153.23	0.37	31.01
110.98	152.70	152.97	153.76	154.51	153.75	0.60	32.58
115.82	153.07	152.85	154.25	155.56	154.22	1.06	34.00
121.00	153.45	152.40	154.76	156.99	154.72	1.79	35.52
125.92	153.80	152.01	155.20	158.16	155.13	2.40	36.96
130.87	154.13	152.04	155.86	159.39	155.77	2.87	38.42
135.77	154.45	152.36	156.74	160.81	156.64	3.30	39.85
140.94	154.78	152.70	157.62	162.18	157.51	3.70	41.37
145.89	155.07	153.02	158.42	163.42	158.30	4.06	42.82
150.97	155.37	153.36	159.27	164.69	159.12	4.43	44.31
155.79	155.64	153.67	159.99	165.84	159.84	4.75	45.79
160.72	155.91	153.99	160.85	167.12	160.66	5.13	47.18
165.87	156.19	154.32	161.62	168.30	161.43	5.46	48.69
170.90	156.45	154.65	162.46	169.52	162.22	5.81	50.17
175.87	156.70	154.96	163.20	170.68	162.96	6.14	51.62
180.97	156.94	155.27	164.00	171.93	163.75	6.51	53.12
185.69	157.17	155.55	164.72	173.07	164.47	6.85	54.51
190.58	157.39	155.83	165.38	174.15	165.14	7.16	55.94
195.66	157.62	156.13	166.20	175.49	165.95	7.56	57.43
200.97	157.85	156.41	166.93	176.86	166.75	7.93	58.99
205.33	158.04	156.62	167.51	177.84	167.33	8.29	60.27
209.00	158.07	156.65	167.61	178.00	167.43	8.34	60.47
209.07	158.20	156.77	168.07	178.78	167.89	8.60	61.01
210.98	158.28	156.86	168.34	179.21	168.15	8.73	61.93
211.06	158.28	156.86	168.35	179.22	168.16	8.74	61.95
212.33	158.33	156.93	168.52	179.50	168.33	8.82	62.33
213.22	158.37	156.98	168.64	179.71	168.40	8.86	62.59
213.88	158.39	157.01	168.73	179.88	168.55	8.93	62.78
214.15	158.40	157.03	168.81	180.01	168.63	8.98	62.93
214.40	158.41	157.04	168.87	180.12	168.69	9.01	63.06
214.82	158.43	157.06	168.92	180.22	168.75	9.05	63.16

RUN NO. 95

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 5 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: GFT

OBST IT: SPECIFIED AT 25 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	126.62	126.51	126.66	126.81	126.66	0.12	0.29
5.67	129.68	129.58	129.73	129.89	129.73	0.12	1.66
9.37	132.48	132.41	132.56	132.71	132.56	0.12	2.75
15.27	135.98	135.94	136.09	136.25	136.10	0.12	4.48
18.75	137.60	137.59	137.73	137.89	137.74	0.12	5.50
24.04	139.62	139.65	139.80	139.95	139.80	0.12	7.06
30.74	141.68	141.75	141.90	142.05	141.90	0.12	9.02
35.94	143.00	143.11	143.26	143.42	143.26	0.12	10.55
40.98	144.12	144.27	144.42	144.57	144.42	0.12	12.03
45.84	145.07	145.26	145.41	145.57	145.42	0.12	13.46
50.69	145.94	146.17	146.32	146.47	146.32	0.12	14.88
55.99	146.79	147.06	147.22	147.37	147.22	0.12	16.43
60.50	147.46	147.77	147.92	148.08	147.92	0.12	17.76
65.74	148.18	148.53	148.68	148.84	148.69	0.12	19.30
70.82	148.82	149.22	149.37	149.54	149.38	0.13	20.79
75.93	149.42	149.86	150.02	150.20	150.03	0.13	22.29
80.77	149.95	150.43	150.61	150.79	150.61	0.14	23.71
85.87	150.48	151.00	151.19	151.39	151.19	0.15	25.21
90.69	150.96	151.50	151.71	151.94	151.72	0.17	26.62
95.98	151.45	152.00	152.27	152.54	152.27	0.21	28.17
100.64	151.86	152.40	152.74	153.08	152.74	0.27	29.54
105.64	152.28	152.75	153.23	153.70	153.23	0.37	31.01
110.98	152.70	152.97	153.76	154.51	153.75	0.60	32.58
115.82	153.07	152.85	154.25	155.56	154.22	1.06	34.00
121.00	153.45	152.40	154.76	156.99	154.72	1.79	35.57
125.92	153.80	152.01	155.20	158.16	155.13	2.40	36.50
130.87	154.13	152.04	155.86	159.39	155.77	2.87	38.42
135.77	154.45	152.36	156.74	160.81	156.64	3.30	39.85
140.94	154.78	152.70	157.62	162.18	157.51	3.70	41.37
145.89	155.07	153.02	158.42	163.42	158.30	4.06	42.82
150.97	155.37	153.36	159.27	164.69	159.12	4.43	44.31
155.79	155.64	153.67	159.99	165.84	159.84	4.75	45.73
160.72	155.91	153.89	160.85	167.12	160.66	5.13	47.18
165.87	156.19	154.32	161.62	168.30	161.43	5.46	48.69
170.90	156.45	154.65	162.46	169.52	162.22	5.81	50.17
175.87	156.70	154.96	163.20	170.68	162.96	6.14	51.62
180.97	156.94	155.27	164.00	171.93	163.75	6.51	53.12
185.69	157.17	155.55	164.72	173.07	164.47	6.85	54.51
190.58	157.39	155.83	165.58	174.15	165.14	7.16	55.94
195.66	157.62	156.13	166.20	175.49	165.95	7.56	57.43
200.97	157.85	156.41	166.93	176.86	166.75	7.99	58.99
203.90	157.98	156.55	167.30	177.50	167.13	8.19	59.85
205.33	158.04	156.61	167.51	177.86	167.34	8.30	60.27
206.00	158.07	156.63	167.61	178.04	167.44	8.37	60.47
209.07	158.20	157.90	169.22	179.96	169.04	8.62	61.37
209.57	158.22	158.60	170.07	180.90	169.87	8.71	DIFR
212.00	158.32	164.86	176.48	197.39	176.26	8.80	DIFR
213.00	158.35	167.44	179.12	190.08	178.69	8.95	DIFR
214.00	158.40	170.01	181.76	192.76	181.53	8.89	DIFR
215.00	158.44	172.60	184.39	195.44	184.16	8.92	DIFR
216.00	158.48	175.18	187.03	198.11	186.79	8.96	DIFR
217.00	158.52	177.77	189.67	200.79	189.42	9.00	DIFR

RUN NO. 96

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 5 GHz

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN ELEVATION AT SITE: 0 FT

TERRAIN DELTA b: 50 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

OBST: SPECIFIED AT 50 FT ABOVE MSL

CLIMATE: DESERT

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE:	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	126.62	126.51	126.66	126.81	126.66	0.12	0.20
5.67	129.69	129.58	129.73	129.89	129.73	0.12	1.66
9.37	132.48	132.41	132.56	132.71	132.56	0.12	2.75
15.27	135.98	135.94	136.09	136.25	136.10	0.12	4.48
18.75	137.60	137.59	137.73	137.89	137.74	0.12	5.50
24.04	139.62	139.65	139.80	139.95	139.80	0.12	7.06
30.74	141.68	141.75	141.90	142.05	141.90	0.12	9.02
35.94	143.00	143.11	143.26	143.42	143.26	0.12	10.55
40.98	144.12	144.27	144.42	144.57	144.42	0.12	12.03
45.84	145.07	145.26	145.41	145.57	145.42	0.12	13.46
50.69	145.94	146.17	146.32	146.47	146.32	0.12	14.88
55.99	146.79	147.06	147.22	147.37	147.22	0.12	16.43
60.50	147.46	147.77	147.92	148.08	147.92	0.12	17.76
65.74	148.12	148.53	148.68	148.84	148.69	0.12	19.30
70.82	148.82	149.22	149.37	149.54	149.38	0.13	20.79
75.93	149.42	149.86	150.02	150.20	150.03	0.13	22.29
80.77	149.95	150.43	150.61	150.79	150.61	0.14	23.71
85.87	150.48	151.00	151.19	151.39	151.19	0.15	25.21
90.69	150.96	151.50	151.71	151.94	151.72	0.17	26.62
95.98	151.45	152.00	152.27	152.54	152.27	0.21	28.17
100.64	151.85	152.40	152.74	153.08	152.74	0.27	29.54
105.64	152.28	152.75	153.23	153.70	153.23	0.37	31.01
110.98	152.70	152.97	153.76	154.51	153.75	0.60	32.58
115.82	153.07	152.85	154.25	155.56	154.22	1.06	34.00
121.00	153.45	152.40	154.76	156.99	154.72	1.79	35.52
125.92	153.80	152.01	155.20	158.16	155.13	2.40	36.96
130.87	154.13	152.04	155.86	159.39	155.77	2.87	38.42
135.77	154.45	152.36	156.74	160.81	156.64	3.30	39.85
140.94	154.78	152.70	157.62	162.18	157.51	3.70	41.37
145.89	155.07	153.02	158.42	163.42	158.30	4.06	42.82
150.97	155.37	153.36	159.27	164.69	159.12	4.43	44.31
155.79	155.64	153.67	159.99	165.84	159.84	4.75	45.73
160.72	155.91	153.99	160.85	167.12	160.66	5.13	47.18
165.87	156.19	154.32	161.62	168.30	161.43	5.46	48.69
168.68	156.33	154.50	162.08	169.98	161.87	5.66	49.51
170.90	156.45	154.65	162.46	169.52	162.22	5.81	50.17
175.87	156.70	154.96	163.20	170.69	162.96	6.14	51.62
180.97	156.94	155.69	164.42	172.36	164.17	6.51	53.12
182.16	157.00	155.98	165.03	173.16	164.74	6.71	D:FR
185.00	157.14	157.82	167.09	175.33	166.77	6.85	D:FR
186.00	157.18	158.48	167.92	176.10	167.49	6.89	D:FR
187.00	157.23	159.13	168.54	176.86	168.20	6.92	D:FR
188.00	157.27	159.80	169.27	177.62	168.92	6.97	D:FR
189.00	157.32	160.46	170.00	178.38	169.64	7.01	D:FR
190.00	157.37	161.13	170.72	179.14	170.36	7.04	D:FR
191.00	157.41	161.78	171.45	179.90	171.07	7.08	D:FR
192.00	157.46	162.41	172.18	180.66	171.78	7.14	D:FR
193.00	157.50	163.05	172.90	181.42	172.48	7.18	D:FR
194.00	157.55	163.69	173.63	182.20	173.20	7.24	D:FR
195.00	157.59	164.33	174.36	182.96	173.92	7.29	D:FR
196.00	157.64	164.98	175.09	183.76	174.64	7.34	D:FR
197.00	157.68	165.63	175.81	184.57	175.37	7.40	D:FR

198.00	157.72	166.27	176.54	185.41	176.10	7.48	DIFR
199.00	157.77	166.92	177.26	186.26	176.84	7.56	D:FR
200.00	157.81	167.56	177.99	187.10	177.58	7.64	DIFR
201.00	157.85	168.21	178.72	187.94	178.32	7.71	DIFR
202.00	157.90	168.87	179.45	188.78	179.06	7.78	DIFR
203.00	157.94	169.52	180.18	189.61	179.80	7.85	DIFR

RUN NO. 97

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 5.4 NMI  
 TERRAIN DELTA: 0 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHZ  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: DETERMINED AT 0 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N UNITS  
 SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFT DIST (NMI)
1.00	132.64	132.54	132.70	132.87	132.70	0.13	0.30
5.67	135.70	134.77	135.79	136.94	135.83	0.85	1.68
9.37	138.50	136.79	138.62	140.95	138.78	1.63	2.77
15.27	142.00	139.51	142.18	146.01	142.54	2.55	4.52
18.75	143.62	140.86	143.84	148.30	144.30	2.93	5.55
24.04	145.65	142.63	145.93	151.10	146.51	3.34	7.12
30.74	147.70	144.50	148.06	153.82	148.74	3.68	9.10
35.94	149.02	145.77	149.44	155.51	150.19	3.84	10.64
40.98	150.14	147.87	150.62	156.91	151.41	3.97	12.13
45.84	151.10	147.82	151.64	158.10	152.47	4.05	13.57
50.69	151.96	148.70	152.56	159.17	153.42	4.14	15.00
55.99	152.81	149.57	153.49	160.22	154.37	4.21	16.57
60.50	153.48	150.26	154.22	161.03	155.11	4.26	17.91
65.74	154.20	151.00	155.01	161.89	155.91	4.30	19.46
70.82	154.84	151.68	155.72	162.66	156.63	4.34	20.96
75.93	155.44	152.32	156.40	163.39	157.31	4.37	22.47
80.77	155.97	152.90	157.01	164.04	157.92	4.40	23.91
85.87	156.50	153.49	157.63	164.69	158.54	4.43	25.42
90.69	156.96	154.02	158.16	165.28	159.10	4.45	26.84
95.98	157.47	154.57	158.77	165.90	159.68	4.48	28.41
100.64	157.88	155.05	159.27	166.44	160.19	4.50	29.79
105.64	158.30	155.53	159.80	167.02	160.72	4.54	31.27
110.98	158.72	156.01	160.36	167.66	161.28	4.60	32.85
115.82	159.09	156.35	160.89	168.31	161.79	4.72	34.28
121.00	159.47	156.51	161.44	169.11	162.30	4.96	35.81
125.92	159.82	156.56	161.92	169.83	162.71	5.22	37.27
130.87	160.15	156.96	162.68	170.81	163.43	5.44	38.73
135.77	160.47	157.57	163.64	171.93	164.33	5.63	40.18
140.94	160.80	158.17	164.56	172.98	165.19	5.81	41.71
145.89	161.10	158.74	165.44	173.95	166.01	5.96	43.18
150.97	161.39	159.32	166.34	174.91	166.82	6.10	44.68
155.79	161.66	159.84	167.16	175.82	167.58	6.25	46.11
160.72	161.94	160.38	168.05	176.78	168.38	6.41	47.57
165.87	162.21	160.90	168.88	177.71	169.15	6.57	49.09
170.90	162.47	161.42	169.80	178.70	169.96	6.75	50.58
175.87	162.72	161.89	170.60	179.66	170.71	6.94	52.05
180.97	162.96	162.35	171.51	180.79	171.55	7.20	53.56
185.69	163.19	162.74	172.29	181.81	172.28	7.45	54.96
190.58	163.41	163.10	173.08	182.94	173.04	7.75	56.41
195.66	163.64	163.42	173.95	184.36	173.91	8.18	57.91
200.97	163.87	163.75	174.75	185.62	174.72	8.53	59.48
205.70	164.08	164.21	175.53	186.55	175.44	8.73	60.88
210.84	164.29	164.67	176.35	187.56	176.20	8.94	62.40
211.04	164.30	164.69	176.38	187.60	176.23	8.95	62.46
213.22	164.39	164.88	176.72	188.03	176.56	9.04	63.11
214.40	164.44	164.99	176.90	188.27	176.73	9.10	63.45
215.17	164.47	165.06	177.03	188.44	176.85	9.14	63.68
215.72	164.49	165.11	177.16	188.62	176.98	9.19	63.85
216.00	164.50	165.13	177.20	188.67	177.01	9.20	63.93
216.13	164.51	165.14	177.21	188.69	177.03	9.20	63.97
216.46	164.52	165.17	177.26	188.75	177.07	9.21	64.07
216.73	164.53	165.20	177.30	188.80	177.11	9.22	64.15

216.96	164.54	165.22	177.33	188.84	177.14	9.23	64.21
217.27	164.55	165.24	177.37	188.89	177.18	9.24	64.31
217.87	164.57	165.29	177.45	188.99	177.26	9.26	64.48
220.84	164.69	170.89	183.19	194.82	182.98	9.35	
223.00	164.78	179.06	191.52	203.21	191.26	9.43	
224.00	164.82	182.85	195.37	207.09	195.12	9.47	
225.00	164.85	186.64	199.22	210.96	198.96	9.50	
226.00	164.99	190.43	203.07	214.83	202.80	9.53	
227.00	164.93	193.72	206.41	218.21	206.13	9.57	
228.00	164.97	195.37	208.12	219.96	207.84	9.61	

RUN NO. 98

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

TYPE: ISOTROPIC

FREQUENCY: 10 GHz

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

TYPE: ISOTROPIC

POLARIZATION: CIRCULAR

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

TERRAIN ELEVATION AT SITE: 0 FT

TERRAIN DELTA h: 50 FT

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

ORST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

CLIMATE: DESERT

SURFACE TYPE: POOR GROUND

SURFACE REFLECTION LOBBING: CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.05	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.12
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.69	151.96	152.41	152.56	152.72	152.57	0.12	15.00
55.99	152.91	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.69	156.98	157.95	158.19	158.40	158.19	0.17	26.84
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	158.93	160.36	161.93	160.41	1.17	32.85
115.82	159.09	158.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.65	161.95	2.88	37.27
130.87	160.15	158.47	162.68	166.99	162.71	3.33	38.73
135.77	160.47	158.88	163.64	168.45	163.66	3.74	40.18
140.94	160.80	159.30	164.56	169.85	164.57	4.12	41.71
145.89	161.10	159.70	165.44	171.15	165.43	4.47	43.16
150.97	161.39	160.12	166.34	172.45	166.30	4.82	44.68
155.79	161.66	160.50	167.16	173.70	167.12	5.15	46.11
160.72	161.94	160.90	168.05	175.01	167.99	5.51	47.57
165.87	162.21	161.30	168.88	176.27	168.82	5.85	49.09
170.90	162.47	161.70	169.80	177.59	169.70	6.21	50.58
175.87	162.72	162.08	170.60	178.83	170.51	6.54	52.05
180.97	162.96	162.47	171.51	180.26	171.42	6.95	53.56
185.99	163.19	162.83	172.29	181.50	172.21	7.29	54.96
190.58	163.41	163.16	173.08	182.79	173.02	7.67	56.41
195.65	163.64	163.43	173.95	184.32	173.90	8.16	57.91
200.97	163.87	163.79	174.75	185.62	174.72	8.53	59.48
205.70	164.08	164.21	175.53	185.55	175.44	8.73	60.88
210.84	164.29	164.67	176.35	187.56	176.20	8.94	62.40
215.04	164.30	164.69	176.38	187.60	176.23	8.95	62.46
213.22	164.39	164.88	176.72	188.03	176.56	9.04	63.11
214.40	164.44	164.99	176.90	188.27	176.73	9.10	63.45
215.17	164.47	165.06	177.03	188.44	176.85	9.14	63.68
215.72	164.49	165.11	177.16	188.62	176.98	9.19	63.85
216.00	164.50	165.13	177.20	188.67	177.01	9.20	63.93
216.13	164.51	165.14	177.21	188.69	177.03	9.20	63.97
216.46	164.52	165.17	177.26	188.75	177.07	9.21	64.07
216.71	164.53	165.19	177.5	188.79	177.11	9.22	64.14



216.73	164.53	165.20	177.30	188.80	177.11	9.22	64.15
216.96	164.54	165.22	177.33	188.84	177.14	9.23	64.21
217.87	164.57	165.29	177.45	188.99	177.26	9.26	64.48
220.25	164.67	170.77	183.03	194.65	182.83	9.33	DIFR
223.00	164.78	191.22	193.67	205.36	193.43	9.43	DIFR
224.00	164.82	185.02	197.54	209.26	197.29	9.47	DIFR
225.00	164.85	188.83	201.41	213.15	201.15	9.50	DIFR
226.00	164.89	192.64	205.26	217.04	205.01	9.53	DIFR
227.00	164.93	194.85	207.54	219.34	207.26	9.57	SCAT
228.00	164.97	196.37	209.12	220.97	208.84	9.61	SCAT

RUN NO. 99

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 20 NM  
 TERRAIN DATA: 50 FT  
 CLIMATE: DESERT  
 SURFACE REFLECTION COEFFICIENT: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC  
 TYPE: ISOTROPIC  
 TERRAIN ELEVATION AT 50 FT: 0 FT  
 OBSTACLE SPECIFIED AT 25 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 28.6 UNITS  
 SURFACE TYPE: POOR GROUND

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCLUDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.64	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.60	151.96	152.41	152.56	152.72	152.57	0.12	15.00
55.00	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.64	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.60	156.98	157.96	158.18	158.40	158.18	0.17	26.84
95.00	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.32	0.77	31.27
110.98	158.72	158.93	160.36	161.93	160.41	1.17	32.85
115.82	159.09	158.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.65	161.95	2.88	37.27
130.87	160.15	158.47	162.68	166.99	162.71	3.33	38.73
135.77	160.47	158.88	163.64	168.45	163.66	3.74	40.18
140.94	160.80	159.30	164.56	169.85	164.57	4.12	41.71
145.89	161.10	159.70	165.44	171.15	165.43	4.47	43.18
150.97	161.39	160.12	166.34	172.45	166.30	4.82	44.68
155.79	161.66	160.50	167.16	173.70	167.12	5.15	46.11
160.72	161.94	160.90	168.05	175.01	167.99	5.51	47.57
165.87	162.21	161.30	168.88	176.27	168.82	5.85	49.09
170.90	162.47	161.70	169.80	177.59	169.70	6.21	50.58
175.87	162.72	162.08	170.60	178.83	170.51	6.54	52.05
180.97	162.96	162.47	171.51	180.26	171.42	6.95	53.56
185.69	163.19	162.83	172.29	181.50	172.21	7.29	54.96
190.58	163.41	163.16	173.08	182.79	173.02	7.67	56.41
195.66	163.64	163.43	173.95	184.12	173.90	8.16	57.91
200.97	163.87	163.79	174.75	185.62	174.72	8.53	59.48
204.95	164.04	164.14	175.40	186.40	175.32	8.69	60.66
209.70	164.08	164.21	175.53	186.55	175.44	8.73	60.86
209.57	164.24	166.17	177.88	189.08	177.72	8.95	DIFR
212.00	164.34	173.17	185.02	196.34	184.85	9.05	DIFR
213.00	164.38	176.05	187.96	199.32	187.79	9.09	DIFR
214.00	164.42	178.93	190.89	202.29	190.72	9.13	DIFR
215.00	164.46	181.81	193.83	205.27	193.65	9.16	DIFR
216.00	164.50	184.79	196.77	208.24	196.58	9.20	DIFR
217.00	164.54	187.59	199.70	211.21	199.52	9.23	DIFR
218.00	164.58	190.48	202.64	214.19	202.45	9.26	DIFR

RUN NO. 100

JOHNSON & GIERHART

AIRCRAFT ALTITUDE 33000 FT ABOVE MSL

TYPE1 ISOTROPIC

FREQUENCY 10 GHz

POLARIZATION CIRCULAR

FACILITY ANTENNA HEIGHT 20 FT ABOVE MSL

TYPE1 ISOTROPIC

TERRAIN ELEVATION AT SITE 0 FT

HORIZONTAL OBSTACLE DISTANCE UNLIMITED AT 0.6 NM

OBSTACLE SPECIFIED AT 30 FT ABOVE MSL

TERRAIN DATA 30 FT REFRACTIVITY EFFECTIVE EARTH RADIUS 4425 NM

MINIMUM MONTHLY MEAN 24 H UNITS

CLIMATE DESERT

SURFACE TYPE POOR GROUND

SURFACE REFLECTION LOSING CONTRIBUTES TO VARIABILITY

TIME AVAILABILITY FOR INSTANTANEOUS LEVELS EXCLUDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EIT DIST (NMI)
1.00	132.64	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.93	148.06	148.21	148.06	0.12	9.13
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.64	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.69	151.96	152.41	152.56	152.72	152.57	0.12	15.00
55.99	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.40
70.82	154.84	155.57	155.72	155.88	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.69	156.98	157.96	158.18	158.40	158.18	0.17	26.84
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	158.93	160.36	161.93	160.41	1.17	32.85
115.82	159.09	158.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.65	161.95	2.88	37.27
130.87	160.15	158.47	162.60	166.99	162.71	3.33	38.73
135.77	160.47	158.88	163.64	168.45	163.66	3.74	40.18
140.94	160.80	159.30	164.56	169.85	164.57	4.12	41.71
145.89	161.10	159.70	165.44	171.15	165.43	4.47	43.18
150.97	161.39	160.12	166.34	172.45	166.30	4.83	44.68
155.79	161.66	160.50	167.16	173.70	167.12	5.15	46.11
160.72	161.94	160.90	168.05	175.01	167.99	5.51	47.57
165.87	162.21	161.30	168.88	176.27	168.82	5.85	49.09
170.90	162.47	161.70	169.80	177.59	169.70	6.21	50.58
172.42	162.54	161.82	170.05	177.97	169.95	6.31	51.03
175.87	162.72	162.08	170.60	178.83	170.51	6.54	52.05
180.97	162.96	162.55	171.59	180.02	171.50	6.95	53.56
182.16	163.02	163.08	172.43	181.35	172.30	7.14	DIFR
185.00	163.16	163.02	174.58	183.60	174.41	7.26	DIFR
186.00	163.20	163.72	175.33	184.39	175.16	7.30	DIFR
187.00	163.25	166.41	176.09	185.18	175.91	7.33	DIFR
188.00	163.30	167.11	176.85	185.97	176.65	7.37	DIFR
189.00	163.34	167.81	177.60	186.76	177.40	7.40	DIFR
190.00	163.39	168.47	178.36	187.54	178.14	7.45	DIFR
191.00	163.43	169.13	179.12	188.33	178.85	7.50	DIFR
192.00	163.48	169.81	179.85	189.13	179.62	7.55	DIFR
193.00	163.52	170.49	180.63	189.94	180.37	7.60	DIFR
194.00	163.57	171.16	181.39	190.75	181.12	7.65	DIFR
195.00	163.61	171.85	182.15	191.55	181.87	7.70	DIFR
196.00	163.66	172.54	182.91	192.31	182.62	7.75	DIFR
197.00	163.70	173.23	183.67	193.19	183.38	7.80	DIFR

198.00	163.75	173.91	184.43	194.06	184.15	7.97	D:FR
199.00	163.79	174.50	185.19	194.97	184.97	7.95	D:FR
200.00	163.83	175.28	186.95	195.80	185.69	8.02	D:FR
201.00	163.88	175.97	186.71	196.67	186.47	8.09	D:FR
202.00	163.92	176.67	187.47	197.53	187.24	8.15	D:FR
203.00	163.96	177.35	188.23	198.39	188.01	8.22	D:FR
204.00	164.00	178.01	189.00	199.24	188.76	8.29	D:FR

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.5 NMI

TERRAIN DELTA: 150 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 18 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	132.84	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
60.89	151.96	152.41	152.56	152.72	152.57	0.12	15.00
65.99	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.69	156.98	157.96	158.18	158.40	158.18	0.17	26.84
95.98	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	158.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	158.93	160.36	161.93	160.41	1.17	32.85
115.82	159.09	158.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	158.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	158.28	161.92	165.65	161.95	2.88	37.27
130.87	160.15	158.47	162.68	166.69	162.71	3.33	38.73
135.77	160.47	158.88	163.64	169.45	163.66	3.74	40.18
140.94	160.80	159.30	164.56	169.85	164.57	4.12	41.71
145.89	161.10	159.70	165.44	171.15	165.43	4.47	43.18
150.97	161.39	160.12	166.34	172.45	166.30	4.82	44.68
155.79	161.66	160.50	167.16	173.70	167.12	5.15	46.11
160.72	161.94	160.90	168.05	175.01	167.99	5.51	47.57
165.87	162.21	161.30	168.88	176.27	168.82	5.85	49.09
170.90	162.47	161.70	169.80	177.59	169.70	6.21	50.58
175.87	162.72	162.08	170.60	178.83	170.51	6.54	52.05
180.97	162.96	162.47	171.51	180.26	171.42	6.95	53.56
185.69	163.19	162.83	172.29	181.50	172.21	7.29	54.96
190.58	163.41	163.16	173.08	182.79	173.02	7.67	56.41
195.66	163.64	163.43	173.95	184.31	173.90	8.16	57.91
200.97	163.87	163.79	174.76	185.62	174.72	8.53	59.48
205.70	164.08	164.21	175.53	186.56	175.44	8.73	60.88
210.84	164.29	164.67	176.35	187.56	176.20	8.94	62.40
211.04	164.30	164.89	176.38	187.60	176.23	8.95	62.46
213.22	164.39	164.88	176.72	189.03	176.56	9.04	63.11
214.40	164.44	164.99	176.90	188.27	176.73	9.10	63.45
215.17	164.47	165.06	177.03	188.44	176.85	9.14	63.68
215.72	164.49	165.11	177.16	188.62	176.98	9.19	63.85
215.72	164.49	165.11	177.16	188.62	176.98	9.19	63.85
216.00	164.50	165.13	177.20	188.67	177.01	9.20	63.93
216.13	164.51	165.14	177.21	188.69	177.03	9.20	63.97
216.46	164.52	165.17	177.26	188.75	177.07	9.21	64.07

216.73	164.53	165.20	177.30	188.80	177.11	9.22	64.15
216.96	164.54	165.22	177.33	188.84	177.14	9.23	64.21
217.87	164.57	170.06	182.21	193.75	182.02	9.26	64.48
217.96	164.58	170.57	182.72	194.27	182.53	9.26	DIFR
220.00	164.66	178.39	190.64	202.25	190.44	9.32	DIFR
221.00	164.70	182.20	194.52	206.16	194.31	9.36	DIFR
222.00	164.74	186.01	198.40	210.07	198.17	9.40	DIFR
223.00	164.76	189.83	202.28	213.97	202.04	9.43	DIFR
224.00	164.82	193.51	206.02	217.74	205.78	9.47	SCAT
225.00	164.85	195.15	207.72	219.47	207.46	9.50	SCAT

RUN NO. 102

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL TYPE: ISOTROPIC  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL TYPE: ISOTROPIC  
 HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.21 NM!  
 TERRAIN DELTA: 250 FT REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NM!  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: DETERMINED AT 37 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N-UNITS  
 SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NM)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EPP DIST (NM)
1.00	132.64	132.55	132.70	132.85	132.70	0.12	0.30
5.67	135.70	135.64	135.79	135.94	135.79	0.12	1.68
9.37	138.50	138.47	138.62	138.78	138.62	0.12	2.77
15.27	142.00	142.03	142.18	142.34	142.18	0.12	4.52
18.75	143.62	143.69	143.84	143.99	143.84	0.12	5.55
24.04	145.65	145.78	145.93	146.08	145.93	0.12	7.12
30.74	147.70	147.91	148.06	148.21	148.06	0.12	9.10
35.94	149.02	149.29	149.44	149.59	149.44	0.12	10.64
40.98	150.14	150.47	150.62	150.77	150.62	0.12	12.13
45.84	151.10	151.49	151.64	151.79	151.64	0.12	13.57
50.69	151.98	152.41	152.66	152.72	152.57	0.12	15.00
55.99	152.81	153.34	153.49	153.65	153.49	0.12	16.57
60.50	153.48	154.07	154.22	154.38	154.22	0.12	17.91
65.74	154.20	154.85	155.01	155.17	155.01	0.12	19.46
70.82	154.84	155.57	155.72	155.89	155.73	0.13	20.96
75.93	155.44	156.24	156.40	156.57	156.41	0.13	22.47
80.77	155.97	156.84	157.01	157.19	157.02	0.14	23.91
85.87	156.50	157.44	157.63	157.82	157.63	0.15	25.42
90.89	156.98	157.96	158.18	158.40	158.18	0.17	26.84
95.58	157.47	158.50	158.77	159.04	158.77	0.21	28.41
100.64	157.88	158.75	159.27	159.81	159.27	0.41	29.79
105.64	158.30	159.85	159.80	160.81	159.82	0.77	31.27
110.98	158.72	159.93	160.36	161.93	160.41	1.17	32.85
115.82	159.09	159.86	160.89	163.09	160.94	1.65	34.28
121.00	159.47	159.56	161.44	164.49	161.49	2.32	35.81
125.92	159.82	159.28	161.92	165.65	161.96	2.86	37.27
130.87	160.15	158.47	162.88	166.99	162.71	3.33	38.73
135.77	160.47	158.88	163.84	168.45	163.66	3.74	40.18
140.94	160.80	159.30	164.56	169.85	164.57	4.12	41.71
145.89	161.10	159.70	165.44	171.15	165.43	4.47	43.18
150.97	161.39	160.12	166.34	172.46	166.30	4.82	44.68
155.79	161.66	160.50	167.16	173.70	167.12	5.15	46.11
160.72	161.94	160.90	168.05	175.01	167.99	5.51	47.57
165.87	162.21	161.30	168.88	176.27	168.82	5.85	49.09
170.90	162.47	161.70	169.60	177.59	169.70	6.21	50.58
175.87	162.72	162.08	170.60	178.83	170.51	6.54	52.05
180.97	162.93	162.47	171.51	180.26	171.42	6.95	53.56
185.69	163.19	162.83	172.29	181.50	172.21	7.29	54.96
190.58	163.41	163.16	173.08	182.79	173.02	7.67	56.41
195.66	163.64	163.43	173.95	184.31	173.91	8.16	57.91
200.97	163.87	163.79	174.75	185.62	174.72	8.53	59.48
205.70	164.08	164.21	175.53	186.65	175.74	8.73	60.88
210.94	164.29	164.07	176.35	187.55	176.20	8.94	62.40
210.84	164.29	164.67	176.35	187.55	176.20	8.94	62.40
211.04	164.30	164.69	176.36	187.60	176.23	8.95	62.46
213.22	164.39	165.50	177.33	188.65	177.17	9.04	63.11
214.40	164.44	169.89	181.80	193.17	181.63	9.10	63.45
214.50	164.44	170.22	182.21	193.63	182.03	9.14	DIFR
217.00	164.54	178.92	191.04	202.55	190.85	9.23	DIFR
218.00	164.58	182.41	194.57	206.12	194.38	9.26	DIFR
219.00	164.62	185.91	198.11	209.69	197.92	9.29	DIFR
220.00	164.66	189.40	201.65	213.26	201.45	9.32	DIFR

221.00	164.70	192.87	205.10	216.83	204.98	9.36	DIFR
222.00	164.74	195.84	208.23	219.89	208.00	0.40	SCAT



RUNNO. 103

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 34 NMI

TERRAIN DELTA: 0 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 13 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N-UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	136.16	136.09	136.25	136.42	136.25	0.13	0.30
5.67	139.22	138.33	139.35	140.51	139.39	0.85	1.68
9.37	142.02	140.37	142.21	144.53	142.36	1.63	2.79
15.27	145.52	143.13	145.80	149.62	146.16	2.55	4.54
18.75	147.14	144.50	147.47	151.93	147.94	2.93	5.57
24.04	149.17	146.29	149.59	154.77	150.18	3.34	7.15
30.74	151.22	148.20	151.76	157.53	152.45	3.68	9.13
35.94	152.54	149.51	153.18	159.24	153.92	3.84	10.68
40.98	153.66	150.63	154.39	160.68	155.18	3.97	12.18
45.84	154.62	151.62	155.44	161.90	156.26	4.06	13.62
50.69	155.48	152.52	156.39	163.00	157.25	4.14	15.06
55.99	156.33	153.44	157.35	164.08	158.23	4.21	16.64
60.50	157.00	154.16	158.11	164.93	159.00	4.26	17.98
65.74	157.72	154.94	158.94	165.82	159.84	4.30	19.54
70.82	158.36	155.65	159.69	166.63	160.59	4.34	21.04
75.93	158.96	156.33	160.41	167.39	161.32	4.37	22.57
80.77	159.50	156.95	161.06	168.08	161.97	4.40	24.00
85.87	160.03	157.57	161.71	168.78	162.62	4.43	25.52
90.69	160.50	158.14	162.31	169.41	163.22	4.46	26.95
95.98	160.99	158.73	162.94	170.10	163.86	4.49	28.52
100.64	161.40	159.23	163.49	170.70	164.41	4.53	29.91
105.64	161.82	159.76	164.07	171.34	164.99	4.58	31.39
110.98	162.25	160.28	164.68	172.05	165.61	4.65	32.98
115.82	162.62	160.87	165.26	172.76	166.17	4.77	34.42
121.00	163.00	160.89	165.88	173.62	166.74	5.02	35.96
125.92	163.34	160.99	166.41	174.40	167.21	5.27	37.42
130.87	163.68	161.49	167.27	175.47	168.03	5.49	38.89
135.77	163.99	162.18	168.31	176.67	169.01	5.69	40.35
140.94	164.32	162.85	169.30	177.80	169.94	5.86	41.88
145.89	164.62	163.50	170.28	178.87	170.85	6.02	43.35
150.97	164.91	164.15	171.25	179.93	171.74	6.17	44.86
155.79	165.18	164.77	172.18	180.95	172.60	6.33	46.29
160.72	165.46	165.39	173.15	182.02	173.49	6.50	47.76
165.87	165.73	166.01	174.11	183.09	174.38	6.67	49.29
170.90	165.99	166.61	175.13	184.24	175.31	6.89	50.79
175.87	166.24	167.15	176.03	185.40	176.18	7.13	52.26
180.97	166.49	167.69	177.08	186.79	177.18	7.46	53.78
185.69	166.71	168.13	177.97	188.10	178.06	7.80	55.18
190.58	166.94	168.62	178.92	189.40	178.98	8.12	56.63
195.66	167.16	169.24	179.92	190.62	179.93	8.35	58.14
200.97	167.40	169.87	180.88	191.78	180.84	8.56	59.72
205.55	167.59	170.43	181.80	192.84	181.70	8.75	61.08
210.47	167.80	171.04	182.75	193.97	182.59	8.96	62.54
213.22	167.91	171.38	183.26	194.61	183.09	9.08	63.36
214.82	167.97	171.58	183.56	194.99	183.39	9.15	63.84
215.12	168.01	171.69	183.79	195.28	183.60	9.22	64.11
216.00	168.02	171.73	183.83	195.34	183.64	9.22	64.19
216.31	168.03	171.76	183.88	195.40	183.70	9.23	64.28
216.73	168.05	171.82	183.96	195.49	183.77	9.25	64.41
217.08	168.06	171.86	184.01	195.55	183.82	9.26	64.50
217.31	168.07	171.89	184.06	195.61	183.86	9.27	64.58
217.53	168.08	171.91	184.09	195.65	183.90	9.27	64.64

217.70	168.09	171.93	184.12	195.69	183.93	9.28	64.69
217.80	168.09	171.95	184.14	195.70	183.94	9.28	64.72
218.42	168.12	172.02	184.24	195.83	184.04	9.30	64.91
220.84	168.21	177.28	189.65	201.31	189.43	9.39	DIFR
223.00	168.30	186.73	199.23	210.95	198.09	9.47	DIFR
224.00	168.34	191.10	203.67	215.41	203.41	9.50	DIFR
225.00	168.38	195.47	208.10	219.86	207.83	9.53	DIFR
226.00	168.41	199.54	212.22	224.02	211.95	9.57	SCAT
227.00	168.45	201.58	214.32	226.16	214.04	9.61	SCAT
228.00	168.49	203.36	216.16	228.05	215.88	9.64	SCAT

RUN NO. 104

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	136.16	136.10	136.25	136.41	136.25	0.12	0.30
5.67	139.22	139.20	139.35	139.51	139.35	0.12	1.68
9.37	142.02	142.06	142.21	142.36	142.21	0.12	2.79
15.27	145.52	145.65	145.80	145.95	145.80	0.12	4.54
18.75	147.14	147.32	147.47	147.63	147.47	0.12	5.57
24.04	149.17	149.44	149.59	149.74	149.59	0.12	7.15
30.74	151.22	151.61	151.76	151.91	151.76	0.12	9.13
35.94	152.54	153.03	153.18	153.33	153.18	0.12	10.68
40.98	153.66	154.24	154.39	154.54	154.39	0.12	12.18
45.84	154.62	155.29	155.44	155.59	155.44	0.12	13.62
50.59	155.48	156.24	156.39	156.55	156.39	0.12	15.06
55.99	156.33	157.20	157.35	157.51	157.35	0.12	16.64
60.50	157.00	157.96	158.11	158.27	158.11	0.12	17.98
65.74	157.72	158.79	158.94	159.10	158.94	0.12	19.54
70.82	158.36	159.53	159.69	159.86	159.69	0.12	21.04
75.93	158.96	160.25	160.41	160.58	160.41	0.12	22.57
80.77	159.50	160.88	161.06	161.24	161.06	0.14	24.00
85.87	160.03	161.52	161.71	161.91	161.72	0.15	25.52
90.69	160.50	161.91	162.31	162.73	162.51	0.32	26.95
95.98	160.99	162.09	162.94	163.87	162.97	0.70	28.52
100.64	161.40	162.30	163.49	164.85	163.54	1.00	29.91
105.64	161.82	162.54	164.07	165.87	164.15	1.31	31.39
110.98	162.25	162.77	164.68	166.99	164.81	1.65	32.98
115.82	162.62	162.86	165.26	168.11	165.40	2.05	34.42
121.00	163.00	162.70	165.88	169.47	166.01	2.65	35.96
125.92	163.34	162.53	166.41	170.64	166.52	3.17	37.42
130.87	163.68	162.84	167.27	172.05	167.38	3.60	38.89
135.77	163.99	163.35	168.31	173.57	168.40	3.99	40.35
140.94	164.32	163.87	169.30	175.02	169.39	4.36	41.88
145.89	164.62	164.36	170.28	176.42	170.35	4.71	43.35
150.97	164.91	164.86	171.25	177.81	171.30	5.06	44.86
155.79	165.19	165.34	172.18	179.17	172.23	5.40	46.29
160.72	165.46	165.83	173.15	180.58	173.18	5.76	47.76
165.87	165.73	166.34	174.11	181.96	174.14	6.10	49.29
170.90	165.99	166.84	175.13	183.46	175.14	6.49	50.79
175.87	166.24	167.53	176.03	184.90	176.08	6.86	52.26
180.97	166.49	167.80	177.08	186.53	177.14	7.32	53.78
185.69	166.71	168.16	177.97	188.01	178.04	7.75	55.18
190.58	166.94	168.62	178.92	189.40	178.98	8.12	56.63
195.66	167.16	169.24	179.92	190.62	179.93	8.35	58.14
200.97	167.40	169.87	180.88	191.78	180.84	8.56	59.72
205.55	167.59	170.43	181.80	192.84	181.70	8.75	61.08
210.47	167.80	171.04	182.75	193.97	182.59	8.96	62.54
213.22	167.91	171.38	183.26	194.61	183.09	9.08	63.36
214.82	167.97	171.58	183.56	194.99	183.39	9.15	63.84
215.72	168.01	171.69	183.79	195.28	183.60	9.22	64.11
216.00	168.02	171.73	183.83	195.34	183.64	9.22	64.19
216.31	168.03	171.76	183.88	195.40	183.70	9.23	64.28
216.73	168.05	171.82	183.96	195.49	183.77	9.25	64.41
217.06	168.06	171.86	184.01	195.55	183.82	9.26	64.50
217.23	168.07	171.88	184.04	195.59	183.85	9.26	64.55
217.31	168.07	171.89	184.06	195.61	183.86	9.27	64.58

217.55	168.08	171.91	184.09	195.65	183.90	9.27	64.64
217.70	168.09	171.93	184.12	195.69	183.93	9.28	64.69
218.42	168.12	172.02	184.24	195.83	184.04	9.30	64.91
220.25	168.19	177.17	189.50	201.14	189.29	9.36	DIFR
223.00	168.30	189.23	201.74	213.46	201.49	9.47	DIFR
224.00	168.34	193.62	205.19	217.93	205.93	9.50	DIFR
225.00	168.38	198.01	210.64	222.40	210.37	9.53	DIFR
226.00	168.41	200.92	213.61	225.40	213.33	9.57	SCAT
227.00	168.45	202.78	215.52	227.36	215.24	9.61	SCAT
228.00	168.49	204.43	217.22	229.11	216.94	9.64	SCAT

RUN NO. 105

JOHNSON & OIERHART

AIRCRAFT ALTITUDE: 3300 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN DELTA h: 30 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: SPECIFIED AT 25 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	136.16	136.10	136.25	136.41	136.25	0.12	0.30
5.67	139.22	139.20	139.35	139.51	139.35	0.12	1.68
9.37	142.02	142.06	142.21	142.36	142.21	0.12	2.79
15.27	145.52	145.65	145.80	145.95	145.80	0.12	4.54
18.75	147.14	147.32	147.47	147.63	147.47	0.12	5.57
24.04	149.17	149.44	149.59	149.74	149.59	0.12	7.15
30.74	151.22	151.61	151.76	151.91	151.76	0.12	9.13
35.94	152.54	153.03	153.18	153.33	153.18	0.12	10.68
40.98	153.66	154.24	154.39	154.54	154.39	0.12	12.18
45.84	154.62	155.29	155.44	155.59	155.44	0.12	13.62
50.66	155.46	156.24	156.39	156.55	156.39	0.12	15.06
55.99	156.33	157.20	157.35	157.51	157.35	0.12	16.64
60.50	157.00	157.96	158.11	158.27	158.11	0.12	17.98
65.74	157.72	158.79	158.94	159.10	158.94	0.12	19.54
70.82	158.36	159.53	159.69	159.86	159.69	0.13	21.04
75.93	158.96	160.25	160.41	160.58	160.41	0.13	22.57
80.77	159.50	160.88	161.06	161.24	161.06	0.14	24.00
85.87	160.03	161.52	161.71	161.91	161.72	0.15	25.52
90.69	160.50	161.91	162.31	162.73	162.31	0.32	26.95
95.98	160.99	162.09	162.94	163.87	162.97	0.70	29.52
100.64	161.40	162.30	163.49	164.85	163.54	1.00	29.91
105.64	161.82	162.54	164.07	165.87	164.15	1.31	31.39
110.98	162.25	162.77	164.68	166.99	164.81	1.65	32.98
115.82	162.62	162.86	165.26	168.11	165.40	2.05	34.42
121.00	163.00	162.70	165.88	169.47	166.01	2.55	35.96
125.92	163.34	162.53	166.41	170.84	166.52	3.17	37.42
130.87	163.68	162.84	167.27	172.05	167.38	3.60	38.89
135.77	163.99	163.35	168.31	173.57	168.40	3.99	40.35
140.94	164.32	163.87	169.30	175.02	169.39	4.36	41.88
145.89	164.62	164.36	170.28	176.42	170.35	4.71	43.35
150.97	164.91	164.86	171.25	177.81	171.30	5.06	44.86
155.79	165.19	165.34	172.18	179.17	172.23	5.40	45.29
160.72	165.46	165.83	173.15	180.58	173.18	5.76	47.76
165.87	165.73	166.34	174.11	181.96	174.14	6.10	49.29
170.90	165.99	166.84	175.13	183.46	175.14	6.49	50.79
175.87	166.24	167.33	176.03	184.90	176.08	6.86	52.26
180.97	166.49	167.80	177.08	186.53	177.14	7.32	53.78
185.69	166.71	168.16	177.97	188.01	178.04	7.75	55.18
190.58	166.94	168.62	178.92	189.40	178.98	8.12	56.63
195.66	167.16	169.24	179.92	190.62	179.93	8.35	58.14
200.97	167.40	169.87	180.88	191.78	180.84	8.56	59.72
205.39	167.58	170.41	181.77	192.81	181.67	8.75	61.04
205.55	167.59	170.43	181.80	192.84	181.70	8.75	61.08
209.57	167.76	172.40	194.16	195.41	184.00	8.99	DIFR
212.00	167.96	179.84	191.75	203.10	191.57	9.08	DIFR
213.00	167.90	182.91	194.86	206.26	194.69	9.12	DIFR
214.00	167.94	185.97	197.98	209.41	197.80	9.16	DIFR
215.00	167.98	189.04	201.10	212.57	200.92	9.19	DIFR
216.00	168.02	192.11	204.22	215.72	204.03	9.22	DIFR
217.00	168.06	195.18	207.34	218.86	207.15	9.26	DIFR
218.00	168.10	198.26	210.46	222.03	210.26	9.29	DIFR

RUN NO. 106

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 33000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI

TERRAIN DELTA h: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 15 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST ITT: SPECIFIED AT 50 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREED SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	136.16	136.10	136.25	136.41	136.25	0.12	0.30
5.67	139.22	139.20	139.35	139.51	139.35	0.12	1.68
9.37	142.02	142.06	142.21	142.36	142.21	0.12	2.79
15.27	145.52	145.65	145.80	145.95	145.80	0.12	4.54
18.75	147.14	147.32	147.47	147.63	147.47	0.12	5.57
24.04	149.17	149.44	149.59	149.74	149.59	0.12	7.15
30.74	151.22	151.61	151.76	151.91	151.76	0.12	9.13
35.94	152.54	153.03	153.18	153.33	153.18	0.12	10.68
40.98	153.66	154.24	154.39	154.54	154.39	0.12	12.18
45.84	154.62	155.29	155.44	155.59	155.44	0.12	13.62
50.69	155.48	156.24	156.39	156.55	156.39	0.12	15.06
55.99	156.33	157.20	157.35	157.51	157.35	0.12	16.64
60.50	157.00	157.96	158.11	158.27	158.11	0.12	17.98
65.74	157.72	158.79	158.94	159.10	158.94	0.12	19.54
70.82	158.36	159.53	159.69	159.86	159.69	0.13	21.04
75.93	158.96	160.25	160.41	160.58	160.41	0.13	22.57
80.77	159.50	160.88	161.06	161.24	161.06	0.14	24.00
85.87	160.03	161.52	161.71	161.91	161.72	0.15	25.52
90.89	160.50	161.91	162.31	162.73	162.31	0.32	26.95
95.98	160.99	162.09	162.94	163.87	162.97	0.70	28.52
100.64	161.40	162.30	163.49	164.85	163.54	1.00	29.91
105.64	161.82	162.54	164.07	165.87	164.15	1.31	31.39
110.98	162.25	162.77	164.68	166.99	164.81	1.65	32.98
115.82	162.62	162.86	165.26	168.11	165.40	2.05	34.47
121.00	163.00	162.70	165.88	169.47	166.01	2.65	35.91
125.92	163.34	162.53	166.41	170.64	166.52	3.17	37.42
130.87	163.68	162.84	167.27	172.05	167.38	3.60	38.89
135.77	163.99	163.35	168.31	173.57	168.40	3.99	40.35
140.94	164.32	163.87	169.30	175.02	169.39	4.36	41.88
145.89	164.62	164.36	170.28	176.42	170.35	4.71	43.35
150.97	164.91	164.86	171.25	177.81	171.30	5.06	44.86
155.79	165.19	165.34	172.18	179.17	172.23	5.40	46.29
160.72	165.46	165.83	173.15	180.58	173.18	5.76	47.76
165.87	165.73	166.34	174.11	181.96	174.14	6.10	49.29
170.90	165.99	166.94	175.13	183.46	175.14	6.49	50.79
174.14	166.15	167.16	175.72	184.41	175.76	6.74	51.75
175.87	166.24	167.33	176.03	184.90	176.08	6.86	52.26
180.97	166.49	167.80	177.08	186.53	177.14	7.32	53.78
182.16	166.54	168.38	177.97	187.58	177.98	7.50	DIFR
185.00	166.68	170.52	180.30	190.01	180.28	7.61	DIFR
186.00	166.72	171.59	181.12	190.86	181.09	7.65	DIFR
187.00	166.77	172.05	181.95	191.71	181.91	7.68	DIFR
188.00	166.82	172.82	182.77	192.57	182.72	7.71	DIFR
189.00	166.86	173.55	183.59	193.42	183.53	7.76	DIFR
190.00	166.91	174.29	184.42	194.27	184.33	7.81	DIFR
191.00	166.95	175.02	185.24	195.13	185.14	7.85	DIFR
192.00	167.00	175.77	186.07	196.00	185.96	7.90	DIFR
193.00	167.04	176.52	186.90	196.88	186.77	7.95	DIFR
194.00	167.09	177.27	187.72	197.75	187.59	8.00	DIFR
195.00	167.13	178.03	188.55	198.62	188.41	8.04	DIFR
196.00	167.18	178.79	189.38	199.49	189.23	8.09	DIFR
197.00	167.22	179.55	190.21	200.38	190.05	8.14	DIFR

198.00	167.27	180.30	191.04	201.29	190.89	8.20	DIFR
199.00	167.31	181.05	191.87	202.21	191.72	8.26	DIFR
200.00	167.35	181.81	192.70	203.12	192.55	8.33	DIFR
201.00	167.40	182.57	193.53	204.03	193.39	8.39	DIFR
202.00	167.44	183.33	194.36	204.94	194.22	8.44	DIFR
203.00	167.48	184.06	195.20	205.85	195.04	8.51	DIFR
204.00	167.53	184.79	196.03	206.76	195.87	8.58	DIFR

RUN NO. 107

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 66000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 3.4 NMI

TERRAIN DELTA: 0 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: EFFECTIVE EARTH RADIUS: 4423 NMI

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HT: DETERMINED AT 0 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	138.56	138.46	138.61	138.77	138.62	0.12	0.22
5.65	139.56	139.24	139.63	140.04	139.64	0.31	1.23
10.69	141.47	140.58	141.55	142.64	141.59	0.81	2.33
13.70	142.66	141.41	142.76	144.36	142.84	1.15	2.98
17.90	144.23	142.54	144.35	146.63	144.50	1.60	3.89
24.44	146.36	144.15	146.51	149.75	146.79	2.20	5.32
29.56	147.78	145.29	147.96	151.80	148.33	2.56	6.43
32.81	148.59	145.95	148.79	152.97	149.21	2.76	7.14
36.76	149.49	146.71	149.71	154.23	150.18	2.96	8.00
41.68	150.50	147.58	150.76	155.65	151.29	3.18	9.07
48.00	151.66	148.60	151.95	157.25	152.56	3.41	10.45
55.93	152.93	149.75	153.27	158.95	153.95	3.63	12.17
60.40	153.58	150.37	153.95	159.79	154.65	3.72	13.14
65.60	154.27	151.03	154.68	160.68	155.42	3.81	14.27
70.80	154.92	151.66	155.36	161.51	156.13	3.89	15.41
75.89	155.51	152.24	155.99	162.26	156.78	3.96	16.51
80.70	156.03	152.76	156.55	162.92	157.35	4.01	17.56
85.78	156.55	153.29	157.11	163.58	157.93	4.07	18.67
90.70	157.03	153.77	157.62	164.18	158.46	4.12	19.74
95.52	157.47	154.22	158.10	164.73	158.96	4.16	20.79
100.83	157.94	154.70	158.61	165.32	159.48	4.20	21.84
105.58	158.33	155.11	159.04	165.81	159.93	4.23	22.98
110.31	158.71	155.50	159.46	166.27	160.35	4.26	24.01
115.43	159.10	155.90	159.89	166.75	160.79	4.29	25.12
120.96	159.50	156.32	160.34	167.24	161.24	4.32	26.32
125.78	159.84	156.88	160.72	167.65	161.62	4.34	27.37
130.86	160.18	157.05	161.11	168.08	162.02	4.36	28.48
135.82	160.50	157.39	161.48	168.48	162.39	4.38	29.55
140.72	160.81	157.73	161.84	168.86	162.75	4.40	30.62
145.93	161.12	158.08	162.21	169.26	163.12	4.42	31.76
150.75	161.40	158.39	162.54	169.62	163.46	4.44	32.80
155.66	161.68	158.71	162.88	169.98	163.79	4.46	33.87
160.83	161.96	159.03	163.22	170.35	164.14	4.48	35.00
165.81	162.23	159.33	163.55	170.70	164.47	4.49	36.08
170.61	162.47	159.61	163.86	171.05	164.78	4.52	37.13
175.63	162.72	159.89	164.19	171.42	165.10	4.56	38.22
180.88	162.90	160.14	164.53	171.83	165.44	4.62	39.36
185.87	163.21	160.28	164.86	172.27	165.74	4.73	40.45
190.85	163.44	160.24	165.19	172.80	166.02	4.95	41.53
195.99	163.67	160.26	165.81	173.73	166.55	5.29	42.65
200.92	163.89	160.88	166.66	175.08	167.60	5.57	43.72
205.97	164.10	161.40	167.90	176.14	168.44	5.77	44.82
210.83	164.31	161.84	168.65	177.01	169.13	5.93	45.88
215.83	164.51	162.30	169.45	177.86	169.84	6.09	46.97
221.00	164.71	162.72	170.17	178.65	170.49	6.22	48.09
225.91	164.90	163.11	170.81	179.33	171.07	6.34	49.16
230.96	165.10	163.51	171.55	180.03	171.69	6.46	50.26
235.86	165.28	163.87	172.18	180.71	172.25	6.58	51.32
240.79	165.46	164.21	172.78	181.42	172.80	6.72	52.40
245.84	165.64	164.58	173.50	182.22	173.44	6.89	53.50
250.99	165.82	164.94	174.16	183.02	174.05	7.07	54.62
255.90	165.98	165.26	174.74	183.78	174.60	7.23	55.69



260.93	166.15	165.59	175.42	184.66	175.24	7.45	56.78
265.88	166.32	165.90	176.06	185.65	175.89	7.72	57.86
270.71	165.47	166.19	176.65	186.58	176.48	7.96	58.91
275.67	166.63	166.43	177.21	187.56	177.08	8.26	59.99
280.76	166.79	166.63	177.90	188.79	177.78	8.66	61.10
285.95	166.95	166.96	178.56	189.70	178.42	8.88	62.22
290.70	167.09	167.31	179.13	190.44	178.97	9.03	63.26
295.15	167.22	167.64	179.65	191.09	179.47	9.16	64.23
299.96	167.24	167.70	179.74	191.21	179.56	9.19	64.40
297.35	167.28	167.80	179.90	191.41	179.72	9.22	64.70
298.52	167.32	167.89	180.04	191.59	179.85	9.26	64.96
299.30	167.34	167.95	180.15	191.73	179.96	9.29	65.13
299.85	167.36	168.00	180.27	191.90	180.07	9.34	65.25
300.26	167.37	168.03	180.33	191.96	180.12	9.35	65.34
300.59	167.38	168.05	180.37	192.01	180.16	9.36	65.41
300.86	167.39	168.07	180.40	192.05	180.19	9.37	65.47
301.09	167.39	168.09	180.43	192.08	180.22	9.37	65.52
301.57	167.41	168.13	180.49	192.15	180.27	9.39	65.62
302.00	167.42	168.16	180.55	192.22	180.32	9.40	65.72
305.14	167.51	173.55	186.08	197.81	185.63	9.48	67.81

RUNNO. 108

JOHNSON & GIERHART

AIRCRAFT ALTITUDE: 66000 FT ABOVE MSL

FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL

HORIZONTAL OBSTACLE DISTANCE: DETERMINED AT 4.83 NMI

TERRAIN DELTA: 50 FT

CLIMATE: DESERT

SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC

TYPE: ISOTROPIC

REFRACTIVITY: 1.375 EARTH RADIUS 4423 NMI

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

FREQUENCY: 10 GHz

POLARIZATION: CIRCULAR

TERRAIN ELEVATION AT SITE: 0 FT

OBST HGT: DETERMINED AT 4 FT ABOVE MSL

MINIMUM MONTHLY MEAN: 280 N UNITS

SURFACE TYPE: POOR GROUND

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	138.56	138.46	138.61	138.77	138.62	0.12	0.22
5.65	139.56	139.48	139.63	139.78	139.63	0.12	1.23
10.69	141.47	141.40	141.55	141.71	141.55	0.12	2.33
13.70	142.66	142.61	142.76	142.91	142.76	0.12	2.98
17.90	144.23	144.20	144.35	144.50	144.35	0.12	3.89
24.44	146.36	146.36	146.51	146.67	146.52	0.12	5.32
29.56	147.78	147.81	147.96	148.12	147.96	0.12	6.43
32.81	148.59	148.64	148.79	148.94	148.79	0.12	7.14
36.76	149.49	149.56	149.71	149.87	149.71	0.12	8.00
41.68	150.50	150.61	150.76	150.91	150.76	0.12	9.07
48.00	151.86	151.80	151.95	152.11	151.95	0.12	10.45
55.93	152.93	153.13	153.27	153.43	153.28	0.12	12.17
60.40	153.58	153.80	153.95	154.10	153.95	0.12	13.14
65.60	154.27	154.53	154.68	154.83	154.68	0.12	14.27
70.80	154.92	155.21	155.36	155.52	155.36	0.12	15.41
75.89	155.51	155.84	155.99	156.14	155.99	0.12	16.51
80.70	156.03	156.40	156.55	156.70	156.55	0.12	17.56
85.78	156.55	156.95	157.11	157.26	157.11	0.12	18.67
90.70	157.03	157.47	157.62	157.78	157.62	0.12	19.74
95.52	157.47	157.95	158.10	158.26	158.10	0.12	20.79
100.83	157.94	158.45	158.61	158.77	158.61	0.12	21.94
105.58	158.33	158.88	159.04	159.20	159.04	0.12	22.98
110.31	158.71	159.30	159.46	159.62	159.46	0.13	24.01
115.43	159.10	159.73	159.89	160.06	159.89	0.13	25.12
120.96	159.50	160.17	160.34	160.52	160.34	0.13	26.32
125.78	159.84	160.55	160.72	160.91	160.73	0.14	27.37
130.86	160.18	160.93	161.11	161.30	161.12	0.15	28.48
135.82	160.50	161.28	161.48	161.69	161.48	0.16	29.55
140.72	160.81	161.63	161.84	162.06	161.84	0.17	30.62
145.93	161.12	161.97	162.21	162.45	162.21	0.19	31.76
150.75	161.40	162.27	162.54	162.81	162.54	0.21	32.80
155.66	161.68	162.57	162.88	163.18	162.87	0.24	33.87
160.83	161.96	162.86	163.22	163.57	163.22	0.28	35.00
165.81	162.23	163.08	163.55	163.99	163.54	0.36	36.08
170.61	162.47	163.13	163.86	164.59	163.86	0.57	37.13
175.63	162.72	163.11	164.19	165.28	164.19	0.85	38.22
180.88	162.98	163.04	164.53	166.06	164.54	1.18	39.36
185.87	163.21	162.81	164.86	166.92	164.87	1.61	40.45
190.85	163.44	162.34	165.19	167.98	165.17	2.20	41.53
195.99	163.67	161.96	165.81	169.45	165.75	2.93	42.65
200.92	163.89	162.26	166.96	171.28	166.84	3.52	43.72
206.00	164.10	162.55	167.90	172.77	167.75	3.99	44.83
206.30	164.12	163.32	166.15	171.05	166.80	3.06	44.89
208.06	164.19	163.36	166.25	171.33	166.94	3.15	45.28
209.84	164.26	163.40	166.36	171.60	167.07	3.25	45.66
211.00	164.31	163.43	166.42	171.77	167.16	3.30	45.91
211.65	164.34	163.44	166.46	171.86	167.20	3.34	46.06
213.47	164.41	163.48	166.56	172.12	167.34	3.42	46.45
215.32	164.49	163.52	166.67	172.38	167.47	3.51	46.86
216.00	164.52	163.54	166.71	172.47	167.52	3.54	47.00
217.19	164.56	163.56	166.78	172.53	167.60	3.60	47.26
219.08	164.64	163.60	166.88	172.89	167.73	3.68	47.67

220.99	164.71	163.64	166.99	173.14	167.87	3.77	48.09
221.00	164.71	163.65	166.99	173.14	167.87	3.77	48.09
222.92	164.79	163.69	167.10	173.29	168.00	3.85	48.51
224.87	164.86	163.74	167.22	173.63	168.13	3.92	48.93
226.00	164.91	163.77	167.28	173.77	168.21	3.97	49.18
226.85	164.94	163.79	167.33	173.88	168.27	4.00	49.36
228.84	165.02	163.84	167.45	174.12	168.40	4.08	49.80
230.86	165.09	163.89	167.56	174.37	168.54	4.16	50.24
231.00	165.10	163.89	167.57	174.39	168.55	4.17	50.27
232.91	165.17	163.94	167.68	174.62	168.68	4.24	50.68
234.97	165.24	163.99	167.80	174.84	168.82	4.32	51.13
238.00	165.28	164.01	167.87	175.02	168.90	4.37	51.36
237.06	165.32	164.04	167.93	175.16	168.97	4.42	51.59
239.17	165.40	164.09	168.06	175.44	169.12	4.51	52.05
241.00	165.46	164.14	168.17	175.69	169.26	4.59	52.44
241.30	165.47	164.14	168.18	175.73	169.28	4.60	52.51
243.46	165.55	164.20	168.32	176.02	169.43	4.69	52.98
245.64	165.63	164.25	168.45	176.31	169.59	4.79	53.45
246.00	165.64	164.26	168.47	176.35	169.62	4.80	53.53
247.85	165.71	164.30	168.59	176.60	169.75	4.88	53.93
250.08	165.78	164.36	168.72	176.89	169.91	4.98	54.42
251.00	165.82	164.38	168.78	177.01	169.98	5.02	54.62
252.33	165.86	164.41	168.87	177.18	170.07	5.07	54.91
254.61	165.94	164.47	169.01	177.48	170.24	5.17	55.40
256.00	165.99	164.50	169.10	177.65	170.34	5.22	55.71
256.91	166.02	164.53	169.16	177.78	170.40	5.26	55.90
259.23	166.10	164.59	169.31	178.08	170.57	5.36	56.41
261.00	166.15	164.63	169.43	178.34	170.71	5.45	56.79
261.59	166.17	164.64	169.47	178.44	170.76	5.48	56.92
263.96	166.25	164.69	169.62	178.81	170.95	5.61	57.44
266.00	166.32	164.74	169.76	179.14	171.12	5.72	57.88
266.37	166.33	164.74	169.78	179.20	171.15	5.74	57.96
268.80	166.41	164.80	169.96	179.59	171.35	5.87	58.49
271.00	166.48	164.84	170.10	179.93	171.53	5.99	58.97
271.25	166.49	164.85	170.12	179.97	171.55	6.00	59.03
273.74	166.57	164.84	170.27	180.35	171.72	6.16	59.57
276.00	166.64	164.80	170.44	180.77	171.91	6.33	60.06
276.25	166.65	164.80	170.47	180.82	171.93	6.35	60.11
278.80	166.73	164.77	170.73	181.35	172.18	6.57	60.67
280.99	166.79	164.85	170.84	181.75	172.31	6.77	61.15
281.38	166.81	164.82	170.84	181.80	172.32	6.80	61.23
284.00	166.89	164.55	170.79	181.88	172.30	6.87	61.80
286.00	166.95	164.60	171.04	182.18	172.51	6.96	62.24
286.66	166.97	164.64	171.22	182.39	172.65	7.02	62.38
289.39	167.05	164.78	172.17	183.44	173.38	7.34	62.97
291.00	167.10	164.65	172.12	183.44	173.32	7.40	63.32
292.20	167.13	164.41	171.57	182.93	172.88	7.30	63.59
295.18	167.22	163.71	170.25	181.70	171.78	7.12	64.23
296.00	167.25	163.63	170.26	181.74	171.77	7.16	64.41
297.34	167.28	163.65	170.81	182.32	172.17	7.26	64.70
298.52	167.32	163.78	171.80	183.35	172.90	7.69	64.96
299.30	167.34	163.90	172.64	184.22	173.53	7.97	65.13
299.85	167.36	163.99	173.29	184.91	174.01	8.19	65.25
300.26	167.37	164.06	173.76	185.39	174.36	8.35	65.34
300.59	167.38	164.11	174.11	185.75	174.62	8.46	65.41
300.86	167.39	164.15	174.37	186.02	174.82	8.55	65.47
301.02	167.39	164.18	174.51	186.15	174.92	8.59	65.50
301.09	167.39	164.21	174.73	186.38	175.09	8.66	65.52
302.00	167.42	165.29	177.68	189.35	177.45	9.40	65.72
304.66	167.49	173.42	185.93	197.65	185.69	9.47	DIFR

RUN NO. 109

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 66000 FT ABOVE MSL  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA E: 50 FT  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC  
 TYPE: ISOTROPIC

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT: SPECIFIED AT 25 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 280 N UNITS  
 SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	138.56	138.46	138.61	138.77	138.62	0.12	0.22
5.65	139.56	139.48	139.63	139.78	139.63	0.12	1.23
10.60	141.47	141.40	141.55	141.71	141.55	0.12	2.33
13.70	142.66	142.61	142.76	142.91	142.76	0.12	2.98
17.90	144.23	144.20	144.35	144.50	144.35	0.12	3.89
24.44	146.36	146.36	146.51	146.67	146.52	0.12	5.32
28.56	147.78	147.81	147.96	148.12	147.96	0.12	6.43
32.81	148.59	148.64	148.79	148.94	148.79	0.12	7.14
36.76	149.49	149.56	149.71	149.87	149.71	0.12	8.00
41.68	150.50	150.61	150.76	150.91	150.76	0.12	9.07
48.00	151.66	151.80	151.95	152.11	151.95	0.12	10.45
55.93	152.93	153.13	153.27	153.43	153.28	0.12	12.17
60.40	153.58	153.80	153.95	154.10	153.95	0.12	13.14
55.60	154.27	154.53	154.68	154.83	154.68	0.12	14.27
70.80	154.92	155.21	155.36	155.52	155.36	0.12	15.41
75.89	155.51	155.84	155.99	156.14	155.99	0.12	16.51
80.70	156.03	156.40	156.55	156.70	156.55	0.12	17.56
85.78	156.55	156.95	157.11	157.26	157.11	0.12	18.67
90.70	157.03	157.47	157.62	157.78	157.62	0.12	19.74
95.52	157.47	157.95	158.10	158.26	158.10	0.12	20.79
100.83	157.94	158.45	158.61	158.77	158.61	0.12	21.94
105.58	158.33	158.88	159.04	159.20	159.04	0.12	22.98
110.31	158.71	159.30	159.46	159.62	159.46	0.13	24.01
115.43	159.10	159.73	159.89	160.06	159.89	0.13	25.12
120.96	159.50	160.17	160.34	160.52	160.34	0.13	26.32
125.78	159.84	160.55	160.72	160.91	160.73	0.14	27.37
130.86	160.18	160.93	161.11	161.30	161.12	0.15	28.48
135.82	160.50	161.28	161.48	161.69	161.48	0.16	29.55
140.72	160.81	161.63	161.84	162.06	161.84	0.17	30.62
145.93	161.12	161.97	162.21	162.45	162.21	0.19	31.76
150.75	161.40	162.27	162.54	162.81	162.54	0.21	32.80
155.66	161.68	162.57	162.88	163.18	162.87	0.24	33.87
160.83	161.96	162.86	163.22	163.57	163.22	0.28	35.00
165.81	162.23	163.08	163.55	163.99	163.54	0.36	36.08
170.61	162.47	163.13	163.86	164.59	163.86	0.57	37.13
175.63	162.72	163.11	164.19	165.28	164.19	0.85	38.22
180.88	162.98	163.04	164.53	166.06	164.54	1.18	39.36
185.87	163.21	162.81	164.86	166.92	164.87	1.61	40.45
190.85	163.44	162.34	165.19	167.98	165.17	2.20	41.53
195.99	163.67	161.96	165.81	169.45	165.70	2.93	42.65
200.92	163.89	162.28	166.96	171.28	166.84	3.52	43.72
205.97	164.10	162.55	167.90	172.76	167.74	3.99	44.82
210.83	164.31	162.82	168.65	173.98	168.50	4.36	45.88
215.83	164.51	163.10	169.45	175.20	169.26	4.73	46.97
221.00	164.71	163.38	170.17	176.32	169.97	5.06	48.09
225.91	164.90	163.66	170.81	177.33	170.60	5.33	49.16
230.90	165.10	163.95	171.55	178.36	171.30	5.63	50.26
235.86	165.28	164.22	172.18	179.33	171.93	5.90	51.32
240.79	165.46	164.50	172.78	180.29	172.54	6.17	52.40
245.84	165.64	164.79	173.50	181.37	173.24	6.48	53.50
250.99	165.82	165.09	174.16	182.39	173.89	6.76	54.62
255.90	165.98	165.37	174.74	183.29	174.48	7.01	55.69

260.93	166.15	165.66	175.42	184.33	175.15	7.29	56.78
265.88	166.32	165.95	176.06	185.43	175.83	7.61	57.86
270.71	166.47	166.23	176.65	186.45	176.45	7.90	58.91
275.67	166.63	166.45	177.21	187.50	177.06	8.22	59.99
280.76	166.79	166.64	177.90	188.78	177.78	8.65	61.10
285.95	166.95	166.96	178.56	189.70	178.42	8.88	62.22
289.80	167.06	167.24	179.02	190.30	178.07	9.01	63.06
290.70	167.09	167.31	179.13	190.44	178.97	9.03	63.26
293.87	167.18	170.24	182.31	193.79	182.13	9.20	DIFR
296.00	167.25	177.24	189.38	200.92	189.19	9.25	DIFR
297.00	167.27	180.52	192.70	204.25	192.50	9.27	DIFR
298.00	167.30	183.80	196.01	207.59	195.81	9.29	DIFR
299.00	167.33	187.08	199.32	210.92	199.12	9.32	DIFR
300.30	167.36	190.34	202.63	214.26	202.42	9.34	DIFR
301.00	167.39	193.60	205.94	217.59	205.73	9.37	DIFR

RUN NO. 110

JOHNSON & GIERHART  
 AIRCRAFT ALTITUDE: 66000 FT ABOVE MSL  
 FACILITY ANTENNA HEIGHT: 20 FT ABOVE MSL  
 HORIZONTAL OBSTACLE DISTANCE: SPECIFIED AT 0.6 NMI  
 TERRAIN DELTA h: 50 FT  
 CLIMATE: DESERT  
 SURFACE REFLECTION LOBING: CONTRIBUTES TO VARIABILITY

TYPE: ISOTROPIC  
 TYPE: ISOTROPIC

FREQUENCY: 10 GHz  
 POLARIZATION: CIRCULAR  
 TERRAIN ELEVATION AT SITE: 0 FT  
 OBST HT SPECIFIED AT 50 FT ABOVE MSL  
 MINIMUM MONTHLY MEAN: 200 N-UNITS  
 SURFACE TYPE: POOR GROUND

TIME AVAILABILITY: FOR INSTANTANEOUS LEVELS EXCEEDED

ESTIMATED QUANTILES OF TRANSMISSION LOSS (DB)

DIST (NMI)	FREE SPACE	10%	50%	90%	EXPECTED VALUE	STD DEV	EFF DIST (NMI)
1.00	138.56	138.46	138.61	138.77	138.62	0.12	0.22
6.65	139.56	139.48	139.63	139.78	139.63	0.12	1.23
10.69	141.47	141.40	141.55	141.71	141.55	0.12	2.33
13.70	142.66	142.61	142.76	142.91	142.76	0.12	2.98
17.90	144.23	144.20	144.35	144.50	144.35	0.12	3.89
24.44	146.36	146.36	146.51	146.67	146.52	0.12	5.32
	147.78	147.81	147.96	148.12	147.96	0.12	6.43
	148.59	148.64	148.79	148.94	148.79	0.12	7.14
	149.49	149.56	149.71	149.87	149.71	0.12	8.00
31.68	150.50	150.61	150.76	150.91	150.76	0.12	9.07
39.00	151.66	151.80	151.95	152.11	151.95	0.12	10.45
55.93	152.93	153.13	153.27	153.43	153.28	0.12	12.17
60.40	153.58	153.80	153.95	154.10	153.95	0.12	13.14
65.60	154.27	154.52	154.68	154.83	154.68	0.12	14.27
70.80	154.92	155.21	155.36	155.52	155.36	0.12	15.41
75.89	155.51	155.84	155.99	156.14	155.99	0.12	16.51
80.70	156.03	156.40	156.55	156.70	156.55	0.12	17.56
85.78	156.55	156.95	157.11	157.26	157.11	0.12	18.67
90.70	157.03	157.47	157.62	157.78	157.62	0.12	19.74
95.52	157.47	157.95	158.10	158.25	158.10	0.12	20.79
100.83	157.94	158.45	158.61	158.77	158.61	0.12	21.94
105.58	158.33	158.88	159.04	159.20	159.04	0.12	22.98
110.31	158.71	159.30	159.46	159.62	159.46	0.13	24.01
115.43	159.10	159.73	159.89	160.06	159.89	0.13	25.12
120.96	159.59	160.17	160.34	160.52	160.34	0.13	26.32
125.78	159.84	160.55	160.72	160.91	160.73	0.14	27.37
130.86	160.16	160.93	161.11	161.30	161.12	0.15	28.48
135.82	160.50	161.28	161.48	161.69	161.48	0.16	29.55
140.72	160.81	161.63	161.84	162.06	161.84	0.17	30.62
145.93	161.12	161.97	162.21	162.45	162.21	0.19	31.76
150.75	161.40	162.27	162.54	162.81	162.54	0.21	32.80
155.66	161.68	162.57	162.88	163.18	162.87	0.24	33.87
160.80	161.96	162.86	163.22	163.57	163.22	0.28	35.00
165.81	162.23	163.08	163.55	163.90	163.54	0.30	36.08
170.61	162.47	163.13	163.86	164.59	163.86	0.57	37.13
175.63	162.72	163.11	164.19	165.28	164.19	0.85	38.22
180.88	162.98	163.04	164.53	166.06	164.54	1.18	39.36
185.87	163.21	162.81	164.86	166.92	164.87	1.61	40.45
190.85	163.44	162.34	165.19	167.98	165.17	2.20	41.53
195.99	163.67	161.96	165.81	169.45	165.75	2.93	42.65
200.92	163.89	162.26	166.96	171.28	166.84	3.52	43.72
205.97	164.10	162.55	167.90	172.76	167.74	3.99	44.82
210.83	164.31	162.82	168.65	173.98	168.50	4.36	45.88
215.83	164.51	163.10	169.45	175.20	169.26	4.73	46.97
221.00	164.71	163.38	170.17	176.32	169.97	5.06	48.09
225.91	164.90	163.66	170.81	177.30	170.80	5.33	49.16
230.96	165.10	163.95	171.55	178.36	171.30	5.63	50.26
235.86	165.28	164.22	172.18	179.33	171.93	5.90	51.32
240.79	165.46	164.50	172.78	180.29	172.54	6.17	52.40
245.84	165.64	164.79	173.50	181.37	173.24	6.48	53.50
250.99	165.82	165.09	174.16	182.39	173.89	6.76	54.62
254.20	165.95	165.31	174.62	183.11	174.37	6.96	55.47

255.90	165.98	165.37	174.74	183.29	174.48	7.01	55.69
260.93	166.15	165.66	175.42	184.33	175.15	7.29	56.78
265.78	166.31	166.00	176.30	185.55	175.97	7.64	DIFR
269.00	166.38	166.97	177.38	186.70	177.04	7.71	DIFR
269.00	166.42	167.66	178.11	187.46	177.77	7.74	DIFR
270.00	166.45	168.35	178.85	188.23	178.50	7.77	DIFR
271.00	166.48	169.04	179.58	188.99	179.23	7.80	DIFR
272.00	166.51	169.73	180.32	189.76	179.96	7.83	DIFR
273.00	166.54	170.42	181.05	190.52	180.69	7.86	DIFR
274.00	166.58	171.12	181.79	191.29	181.42	7.88	DIFR
275.00	166.61	171.82	182.52	192.05	182.16	7.91	DIFR
276.00	166.64	172.51	183.26	192.81	182.89	7.94	DIFR
277.00	166.67	173.18	184.00	193.58	183.61	7.97	DIFR
278.00	166.70	173.85	184.73	194.34	184.34	8.01	DIFR
279.00	166.73	174.53	185.47	195.10	185.06	8.04	DIFR
280.00	166.76	175.21	186.21	195.86	185.79	8.07	DIFR
281.00	166.79	175.89	186.95	196.63	186.52	8.11	DIFR
282.00	166.83	176.58	187.69	197.39	187.25	8.14	DIFR
283.00	166.86	177.26	188.43	198.15	187.98	8.17	DIFR
284.00	166.89	177.95	189.17	198.91	188.71	8.19	DIFR
285.00	166.92	178.65	189.91	199.67	189.44	8.22	DIFR
286.00	166.95	179.34	190.65	200.45	190.18	8.26	DIFR
287.00	166.98	180.03	191.39	201.23	190.92	8.29	DIFR
288.00	167.01	180.73	192.13	202.01	191.65	8.32	DIFR