

APPENDIX A: IONCAP OUTPUT (EXAMPLES)

This Appendix contains representative examples of the ninety IONCAP runs used by the simulation to determine propagation probability. The network paths illustrated are the longest, Boulder, Colorado to Ft. Lauderdale, Florida, and the shortest, Cedar Rapids, Iowa to Schaumburg, Illinois. The propagation conditions illustrated are 1, 3, 5, and 8. See Table 4.

In the frequency reliability table, the Universal Time (UT) is the first column and the Maximum Useable Frequency (MUF) in MHz is the second column. The MUF, in this output, is the maximum frequency with reliability of at least 0.5. The last column is the reliability of the MUF. The remainder of the columns are the hourly reliability of the HF frequency which is at the top of the column.

JAN 1989 SSN = 130.
 BOULDER, CO to FORT LAUDERDALE, FL AZIMUTHS N. MI. KM
 40.02 N 105.20 W - 26.12 N 80.13 W 116.03 309.97 1503.9 2785.0
 ITSA 1 Antenna Package MINIMUM ANGLE 3.0 DEGREES
 XMTR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.50 A .0 OFF AZ .0
 RCVR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.25 A .0 OFF AZ .0
 POWER = 1.000 KW 3 MHZ NOISE = -125.0 DBW REQ. REL = .50 REQ. SNR = 5.0

FREQUENCY / RELIABILITY

UT	MUF	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	-	MUF
1	23.2	.15	.58	.86	.92	.95	.96	.96	.96	.95	.91	-	.63
2	19.1	.16	.66	.92	.96	.97	.97	.97	.93	.70	.34	-	.62
3	16.1	.24	.70	.98	.99	1.00	1.00	.96	.48	.10	.00	-	.62
4	13.8	.30	.77	.99	.99	.99	.91	.50	.24	.04	.00	-	.67
5	12.2	.30	.80	.99	.99	.96	.54	.24	.03	.00	.00	-	.66
6	11.8	.31	.81	.99	.99	.91	.45	.15	.01	.00	.00	-	.66
7	12.6	.27	.78	.99	.99	.97	.60	.30	.05	.00	.00	-	.66
8	13.7	.30	.80	.99	.99	.96	.81	.51	.28	.08	.01	-	.65
9	13.3	.37	.83	.93	.92	.86	.72	.47	.25	.06	.00	-	.62
10	11.4	.36	.88	.97	.95	.74	.25	.00	.00	.00	.00	-	.61
11	9.7	.36	.92	.98	.88	.27	.00	.00	.00	.00	.00	-	.60
12	11.1	.11	.66	.93	.94	.68	.16	.00	.00	.00	.00	-	.66
13	16.9	.00	.16	.59	.81	.86	.89	.87	.58	.25	.01	-	.59
14	25.2	.00	.00	.12	.34	.74	.82	.87	.88	.90	.90	-	.71
15	31.8	.00	.00	.00	.07	.26	.66	.78	.61	.67	.60	-	.71
16	34.5	.00	.00	.00	.01	.07	.22	.36	.79	.60	.67	-	.73
17	35.3	.00	.00	.00	.00	.01	.05	.22	.37	.51	.86	-	.62
18	35.3	.00	.00	.00	.00	.01	.04	.17	.31	.45	.82	-	.79
19	35.5	.00	.00	.00	.00	.02	.08	.22	.68	.79	.86	-	.63
20	35.3	.00	.00	.00	.00	.05	.19	.65	.78	.86	.90	-	.75
21	34.8	.00	.00	.00	.06	.25	.69	.83	.90	.93	.94	-	.74
22	33.7	.00	.00	.08	.33	.71	.84	.89	.92	.94	.94	-	.73
23	31.4	.00	.09	.36	.76	.87	.91	.93	.95	.95	.95	-	.65
24	27.7	.03	.30	.75	.88	.92	.94	.95	.95	.95	.96	-	.65

Figure A-1. IONCAP output for propagation condition 1 over the longest link.

JAN 1989 SSN = 30.
 BOULDER, CO to FORT LAUDERDALE, FL AZIMUTHS N. MI. KM
 40.02 N 105.20 W - 26.12 N 80.13 W 116.03 309.97 1503.9 2785.0
 ITSA 1 Antenna Package MINIMUM ANGLE 3.0 DEGREES
 XMTR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.50 A .0 OFF AZ .0
 RCVR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.25 A .0 OFF AZ .0
 POWER = 1.000 KW 3 MHZ NOISE = -125.0 DBW REQ. REL =.50 REQ. SNR = 5.0

FREQUENCY / RELIABILITY

UT	MUF	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	-	MUF
1	14.7	.17	.50	.76	.63	.98	.88	.59	.38	.18	.03	-	.62
2	12.7	.41	.95	.99	.99	.91	.59	.36	.13	.01	.00	-	.62
3	11.6	.49	.97	.99	.97	.81	.44	.19	.02	.00	.00	-	.63
4	10.7	.55	.97	.99	.93	.56	.25	.02	.00	.00	.00	-	.60
5	10.2	.54	.83	.99	.93	.50	.16	.00	.00	.00	.00	-	.63
6	10.4	.44	.84	.99	.95	.53	.20	.01	.00	.00	.00	-	.63
7	11.3	.41	.83	.99	.98	.78	.35	.07	.00	.00	.00	-	.63
8	12.2	.47	.94	.99	.96	.83	.54	.31	.10	.01	.00	-	.63
9	12.4	.46	.90	.95	.93	.81	.53	.20	.01	.00	.00	-	.59
10	11.6	.42	.96	.99	.98	.77	.36	.06	.00	.00	.00	-	.59
11	10.4	.36	.94	.98	.91	.49	.12	.00	.00	.00	.00	-	.59
12	10.8	.22	.87	.97	.93	.55	.19	.00	.00	.00	.00	-	.58
13	14.0	.01	.29	.87	.97	.98	.89	.35	.02	.00	.00	-	.56
14	18.9	.00	.04	.27	.72	.57	.20	.92	.85	.55	.23	-	.57
15	22.7	.00	.00	.04	.23	.39	.52	.52	.02	.00	.80	-	.56
16	25.0	.00	.00	.00	.05	.17	.34	.51	.20	.01	.00	-	.56
17	25.3	.00	.00	.00	.00	.09	.24	.41	.19	.00	.00	-	.55
18	25.5	.00	.00	.00	.00	.06	.21	.38	.37	.01	.88	-	.56
19	25.7	.00	.00	.00	.02	.07	.29	.44	.83	.88	.90	-	.57
20	25.7	.00	.00	.00	.06	.15	.36	.63	.88	.91	.91	-	.58
21	24.8	.00	.00	.03	.23	.39	.84	.61	.25	.94	.91	-	.59
22	23.7	.00	.01	.23	.42	.84	.66	.63	.17	.92	.87	-	.59
23	21.3	.00	.20	.40	.63	.71	.69	.23	.94	.87	.71	-	.60
24	17.8	.11	.48	.64	.73	.62	.26	.89	.76	.52	.35	-	.61

Figure A-2. IONCAP output for propagation condition 3 over the longest link.

JUL 1989 SSN = 30.
 BOULDER, CO to FORT LAUDERDALE, FL AZIMUTHS N. MI. KM
 40.02 N 105.20 W - 26.12 N 80.13 W 116.03 309.97 1503.9 2785.0
 ITSA 1 Antenna Package MINIMUM ANGLE 3.0 DEGREES
 XMTR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.50 A .0 OFF AZ .0
 RCVR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.25 A .0 OFF AZ .0
 POWER = .100 KW 3 MHZ NOISE = -125.0 DBW REQ. REL = .50 REQ. SNR = 5.0

FREQUENCY / RELIABILITY

UT	MUF	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	-	MUF
1	18.9	.00	.04	.19	.33	.49	.55	.64	.58	.35	.21	-	.36
2	18.1	.01	.10	.24	.39	.58	.63	.65	.56	.29	.16	-	.37
3	16.5	.01	.15	.30	.44	.60	.65	.57	.32	.17	.04	-	.37
4	14.6	.04	.20	.35	.49	.64	.59	.33	.15	.01	.00	-	.38
5	13.1	.07	.23	.36	.44	.61	.51	.16	.01	.00	.00	-	.37
6	11.8	.08	.25	.37	.44	.51	.19	.02	.00	.00	.00	-	.35
7	10.7	.10	.27	.38	.47	.29	.05	.00	.00	.00	.00	-	.35
8	9.7	.11	.28	.34	.46	.15	.02	.00	.00	.00	.00	-	.34
9	9.3	.06	.24	.34	.51	.18	.02	.00	.00	.00	.00	-	.33
10	9.8	.03	.18	.28	.49	.21	.05	.00	.00	.00	.00	-	.31
11	11.2	.00	.06	.27	.41	.45	.18	.03	.00	.00	.00	-	.30
12	13.4	.00	.01	.07	.27	.43	.47	.21	.08	.01	.00	-	.30
13	16.3	.00	.00	.02	.06	.29	.42	.47	.23	.09	.00	-	.29
14	17.1	.00	.00	.00	.04	.11	.01	.46	.43	.15	.03	-	.43
15	16.6	.00	.00	.00	.01	.00	.00	.46	.22	.11	.01	-	.37
16	16.9	.00	.00	.00	.00	.01	.00	.33	.27	.03	.00	-	.27
17	17.5	.00	.00	.00	.00	.00	.00	.30	.17	.08	.00	-	.16
18	16.5	.00	.00	.00	.00	.00	.00	.29	.18	.09	.01	-	.20
19	17.8	.00	.00	.00	.00	.02	.00	.29	.21	.08	.00	-	.18
20	17.2	.00	.00	.00	.00	.03	.00	.27	.35	.15	.07	-	.29
21	17.4	.00	.00	.00	.00	.07	.01	.35	.40	.18	.09	-	.39
22	17.9	.00	.00	.00	.04	.13	.06	.49	.49	.23	.12	-	.31
23	18.7	.00	.00	.01	.06	.34	.23	.54	.58	.31	.18	-	.34
24	18.7	.00	.01	.06	.27	.44	.53	.64	.60	.35	.20	-	.37

Figure A-3. IONCAP output for propagation condition 5 over the longest link.

JUL 1989 SSN = 130.
 BOULDER, CO to FORT LAUDERDALE, FL AZIMUTHS N. MI. KM
 40.02 N 105.20 W - 26.12 N 80.13 W 116.03 309.97 1503.9 2785.0
 ITSA 1 Antenna Package MINIMUM ANGLE 3.0 DEGREES
 XMTR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.50 A .0 OFF AZ .0
 RCVR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.25 A .0 OFF AZ .0
 POWER = .100 KW 3 MHZ NOISE = -125.0 DBW REQ. REL =.50 REQ. SNR = 5.0

FREQUENCY / RELIABILITY

UT	MUF	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	-	MUF
1	21.6	.00	.01	.12	.30	.46	.61	.61	.71	.71	.59	-	.53
2	20.5	.00	.06	.22	.39	.56	.69	.70	.75	.67	.35	-	.54
3	19.4	.02	.13	.29	.45	.65	.65	.74	.73	.57	.24	-	.40
4	18.8	.03	.19	.33	.55	.73	.72	.75	.68	.40	.20	-	.43
5	18.4	.06	.21	.38	.58	.73	.74	.75	.65	.35	.17	-	.43
6	17.5	.06	.23	.40	.62	.73	.74	.72	.58	.25	.09	-	.42
7	15.9	.08	.26	.41	.66	.68	.72	.59	.25	.06	.00	-	.41
8	14.2	.07	.26	.42	.64	.68	.60	.26	.05	.00	.00	-	.40
9	12.9	.05	.23	.39	.54	.60	.37	.11	.00	.00	.00	-	.38
10	12.8	.01	.15	.34	.47	.55	.33	.09	.00	.00	.00	-	.36
11	14.1	.00	.04	.23	.42	.49	.51	.22	.04	.00	.00	-	.35
12	16.4	.00	.00	.05	.25	.36	.47	.51	.26	.10	.00	-	.49
13	19.2	.00	.00	.00	.03	.24	.24	.44	.54	.50	.28	-	.49
14	20.1	.00	.00	.00	.00	.04	.13	.34	.47	.52	.31	-	.34
15	20.2	.00	.00	.00	.00	.01	.08	.01	.44	.50	.30	-	.49
16	19.9	.00	.00	.00	.00	.00	.05	.00	.42	.48	.10	-	.51
17	20.0	.00	.00	.00	.00	.00	.02	.00	.37	.43	.31	-	.44
18	20.6	.00	.00	.00	.00	.00	.01	.00	.32	.39	.26	-	.42
19	21.0	.00	.00	.00	.00	.00	.01	.00	.00	.37	.41	-	.41
20	21.0	.00	.00	.00	.00	.00	.02	.00	.22	.38	.42	-	.42
21	20.8	.00	.00	.00	.00	.00	.05	.00	.30	.46	.28	-	.45
22	20.9	.00	.00	.00	.00	.04	.11	.32	.48	.54	.33	-	.48
23	21.6	.00	.00	.00	.04	.10	.33	.43	.55	.63	.57	-	.38
24	21.8	.00	.00	.02	.19	.38	.52	.56	.69	.73	.63	-	.55

Figure A-4. IONCAP output for propagation condition 8 over the longest link.

JAN 1989 SSN = 130.
 CEDAR RAPIDS, IA to SCHAUMBURG, IL AZIMUTHS N. MI. KM
 41.98 N 91.67 W - 42.03 N 88.08 W 87.73 270.13 160.2 296.6
 ITSA 1 Antenna Package MINIMUM ANGLE 3.0 DEGREES
 XMTR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.50 A .0 OFF AZ .0
 RCVR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.25 A .0 OFF AZ .0
 POWER = 1.000 KW 3 MHZ NOISE = -125.0 DBW REQ. REL = .50 REQ. SNR = 5.0

FREQUENCY / RELIABILITY

UT	MUF	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	-	MUF
1	8.0	1.00	1.00	1.00	.95	.62	.13	.05	.06	.06	.07	-	.99
2	6.6	1.00	1.00	.98	.63	.09	.06	.07	.08	.09	.09	-	.99
3	5.5	1.00	1.00	.79	.11	.06	.06	.07	.08	.09	.09	-	.99
4	4.7	1.00	.97	.39	.05	.06	.06	.07	.08	.09	.09	-	.99
5	4.2	1.00	.89	.12	.05	.06	.06	.07	.08	.09	.09	-	.99
6	4.2	1.00	.89	.12	.05	.06	.06	.07	.08	.09	.09	-	.99
7	4.6	1.00	.96	.31	.05	.06	.07	.08	.08	.09	.10	-	.99
8	4.9	1.00	.95	.44	.05	.06	.07	.08	.08	.09	.10	-	.97
9	4.7	1.00	.94	.28	.05	.06	.07	.08	.08	.09	.10	-	.96
10	3.9	1.00	.75	.03	.05	.06	.07	.07	.08	.09	.10	-	.97
11	3.3	.99	.25	.03	.04	.06	.06	.07	.08	.09	.09	-	.96
12	3.7	1.00	.49	.03	.04	.05	.06	.07	.08	.09	.09	-	.97
13	5.3	1.00	.98	.56	.03	.04	.05	.06	.06	.07	.08	-	.97
14	7.6	.99	1.00	.99	.85	.30	.04	.05	.06	.07	.07	-	.97
15	9.7	.96	1.00	1.00	1.00	.88	.46	.06	.01	.01	.01	-	.99
16	11.0	.73	1.00	1.00	1.00	.96	.65	.11	.01	.01	.01	-	.97
17	11.8	.38	.97	1.00	1.00	1.00	.83	.33	.01	.01	.01	-	.93
18	12.5	.26	.87	.99	1.00	1.00	.92	.58	.11	.01	.01	-	.96
19	13.0	.36	.98	1.00	1.00	1.00	.95	.72	.21	.01	.01	-	.95
20	13.1	.72	.99	1.00	1.00	1.00	.94	.75	.24	.01	.01	-	.92
21	12.7	.97	1.00	1.00	1.00	1.00	.93	.67	.15	.01	.01	-	.93
22	12.0	.98	1.00	1.00	1.00	1.00	.86	.40	.02	.01	.01	-	.91
23	11.0	1.00	1.00	1.00	1.00	.96	.64	.09	.01	.01	.01	-	.96
24	9.6	1.00	1.00	1.00	1.00	.94	.57	.12	.01	.01	.01	-	1.00

Figure A-5. IONCAP output for propagation condition 1 over the shortest link.

JAN 1989 SSN = 30.
 CEDAR RAPIDS, IA to SCHAUMBURG, IL AZIMUTHS N. MI. KM
 41.98 N 91.67 W - 42.03 N 88.08 W 87.73 270.13 160.2 296.6
 ITSA 1 Antenna Package MINIMUM ANGLE 3.0 DEGREES
 XMTR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.50 A .0 OFF AZ .0
 RCVR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.25 A .0 OFF AZ .0
 POWER = 1.000 KW 3 MHZ NOISE = -125.0 DBW REQ. REL = .50 REQ. SNR = 5.0

FREQUENCY / RELIABILITY

UT	MUF	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	-	MUF
1	4.7	1.00	.98	.75	.21	.05	.06	.07	.08	.08	.09	-	.99
2	4.1	1.00	.92	.43	.05	.05	.06	.07	.08	.08	.09	-	.99
3	3.7	1.00	.85	.20	.05	.06	.06	.07	.08	.09	.09	-	.99
4	3.4	1.00	.78	.09	.05	.06	.06	.07	.08	.09	.09	-	.99
5	3.3	1.00	.73	.04	.05	.06	.06	.07	.08	.09	.09	-	.99
6	3.5	1.00	.78	.10	.05	.06	.06	.07	.08	.09	.09	-	.99
7	3.7	1.00	.86	.22	.05	.06	.07	.08	.08	.09	.10	-	.99
8	3.9	1.00	.88	.20	.05	.06	.07	.08	.08	.09	.10	-	.98
9	3.9	1.00	.88	.20	.05	.06	.07	.08	.08	.09	.10	-	.98
10	3.7	1.00	.81	.10	.05	.06	.07	.08	.08	.09	.10	-	.98
11	3.4	.99	.65	.04	.05	.06	.07	.07	.08	.09	.10	-	.98
12	3.5	1.00	.48	.03	.04	.05	.06	.07	.08	.09	.09	-	.97
13	4.3	1.00	.87	.03	.03	.04	.05	.06	.06	.07	.07	-	.96
14	5.6	1.00	.99	.74	.05	.04	.04	.05	.06	.06	.07	-	.96
15	6.7	.99	1.00	.94	.52	.03	.04	.05	.05	.06	.06	-	.96
16	7.3	.99	1.00	.99	.72	.07	.05	.06	.07	.08	.08	-	.98
17	7.7	.97	1.00	1.00	.85	.20	.04	.05	.06	.07	.08	-	.98
18	8.2	.96	1.00	1.00	.92	.40	.04	.05	.06	.07	.08	-	.98
19	8.4	.99	1.00	1.00	.95	.51	.02	.03	.04	.05	.05	-	.99
20	8.3	1.00	1.00	1.00	.96	.47	.03	.04	.05	.06	.06	-	.99
21	7.9	1.00	1.00	1.00	.92	.31	.04	.05	.06	.07	.08	-	1.00
22	7.4	1.00	1.00	1.00	.80	.14	.06	.07	.07	.08	.09	-	.99
23	6.7	1.00	1.00	.97	.41	.05	.06	.07	.08	.09	.09	-	.99
24	5.6	1.00	1.00	.92	.63	.20	.07	.07	.08	.09	.09	-	.99

Figure A-6. IONCAP output for propagation condition 3 over the shortest link.

JUL 1989 SSN = 30.
 CEDAR RAPIDS, IA to SCHAUMBURG, IL AZIMUTHS N. MI. KM
 41.98 N 91.67 W - 42.03 N 88.08 W 87.73 270.13 160.2 296.6
 ITSA 1 Antenna Package MINIMUM ANGLE 3.0 DEGREES
 XMTR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.50 A .0 OFF AZ .0
 RCVR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.25 A .0 OFF AZ .0
 POWER = .100 KW 3 MHZ NOISE = -125.0 DBW REQ. REL =.50 REQ. SNR = 5.0

FREQUENCY / RELIABILITY

UT	MUF	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	-	MUF
1	6.1	.93	.96	.79	.27	.00	.00	.00	.01	.01	.01	-	.88
2	6.0	.95	.96	.77	.22	.00	.00	.01	.01	.01	.01	-	.89
3	5.6	.96	.95	.67	.14	.00	.00	.01	.01	.01	.01	-	.89
4	5.0	.98	.88	.57	.13	.00	.00	.00	.00	.01	.01	-	.88
5	4.4	.97	.82	.53	.07	.00	.00	.00	.00	.01	.01	-	.87
6	4.0	.96	.75	.47	.01	.00	.00	.00	.01	.01	.01	-	.86
7	3.6	.96	.72	.40	.00	.00	.00	.00	.01	.01	.01	-	.88
8	3.3	.95	.70	.27	.00	.00	.00	.00	.01	.01	.01	-	.92
9	3.2	.94	.66	.17	.00	.00	.00	.00	.01	.01	.01	-	.92
10	3.4	.92	.68	.15	.00	.00	.00	.01	.01	.01	.01	-	.88
11	3.9	.93	.77	.25	.00	.00	.00	.00	.01	.01	.01	-	.88
12	4.6	.91	.82	.28	.00	.00	.00	.00	.01	.01	.01	-	.85
13	5.2	.93	.87	.52	.03	.00	.00	.01	.01	.01	.01	-	.84
14	5.4	.80	.88	.61	.08	.00	.00	.01	.01	.01	.01	-	.84
15	5.5	.67	.85	.59	.09	.00	.00	.00	.01	.01	.01	-	.80
16	5.4	.52	.88	.56	.07	.00	.00	.00	.00	.00	.01	-	.82
17	5.5	.35	.86	.54	.07	.00	.00	.00	.00	.00	.01	-	.81
18	5.6	.27	.87	.57	.09	.00	.00	.00	.00	.00	.01	-	.80
19	5.7	.29	.83	.59	.10	.00	.00	.00	.00	.00	.00	-	.76
20	5.6	.47	.84	.56	.05	.00	.00	.00	.00	.00	.01	-	.77
21	5.6	.68	.87	.58	.05	.00	.00	.00	.00	.00	.01	-	.82
22	5.7	.80	.89	.59	.07	.00	.00	.00	.01	.01	.01	-	.82
23	5.9	.93	.94	.68	.11	.00	.00	.00	.01	.01	.01	-	.85
24	6.0	.94	.97	.76	.22	.00	.00	.00	.01	.01	.01	-	.89

Figure A-7. IONCAP output for propagation condition 5 over the shortest link.

JUL 1989 SSN = 130.
 CEDAR RAPIDS, IA to SCHAUMBURG, IL AZIMUTHS N. MI. KM
 41.98 N 91.67 W - 42.03 N 88.08 W 87.73 270.13 160.2 296.6
 ITSA 1 Antenna Package MINIMUM ANGLE 3.0 DEGREES
 XMTR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.50 A .0 OFF AZ .0
 RCVR 2.0 TO 30.0 HORZ. DIPOLE H .00 L -.25 A .0 OFF AZ .0
 POWER = .100 KW 3 MHZ NOISE = -125.0 DBW REQ. REL =.50 REQ. SNR = 5.0

FREQUENCY / RELIABILITY

UT	MUF	3.0	5.0	7.0	9.0	11.0	13.0	15.0	17.0	19.0	21.0	-	MUF
1	7.7	.90	.96	.93	.77	.34	.04	.00	.00	.00	.00	-	.84
2	7.5	.94	.97	.93	.75	.29	.02	.01	.01	.01	.01	-	.85
3	7.2	.96	.97	.90	.68	.19	.00	.01	.01	.01	.01	-	.87
4	6.9	.98	.98	.87	.50	.04	.00	.00	.00	.01	.01	-	.87
5	6.6	.98	.98	.85	.36	.01	.00	.00	.01	.01	.01	-	.87
6	6.2	.98	.97	.80	.22	.00	.00	.00	.01	.01	.01	-	.87
7	5.7	.98	.96	.68	.06	.00	.00	.00	.01	.01	.01	-	.89
8	5.1	.98	.87	.37	.00	.00	.00	.00	.01	.01	.01	-	.87
9	4.6	.97	.83	.19	.00	.00	.00	.00	.01	.01	.01	-	.86
10	4.7	.93	.83	.14	.00	.00	.00	.00	.01	.01	.01	-	.86
11	5.2	.91	.87	.39	.00	.00	.00	.00	.01	.01	.01	-	.84
12	6.0	.89	.90	.83	.66	.33	.09	.00	.00	.01	.01	-	.86
13	6.7	.75	.89	.86	.75	.52	.22	.05	.00	.00	.00	-	.85
14	7.1	.46	.84	.85	.76	.59	.29	.08	.00	.00	.00	-	.84
15	7.2	.09	.81	.83	.75	.59	.30	.09	.00	.00	.00	-	.81
16	7.2	.01	.81	.84	.73	.52	.20	.04	.00	.00	.00	-	.82
17	7.3	.00	.75	.82	.71	.52	.20	.04	.00	.00	.00	-	.79
18	7.3	.00	.71	.81	.71	.52	.21	.04	.00	.00	.00	-	.78
19	7.4	.00	.67	.77	.70	.53	.21	.04	.00	.00	.00	-	.74
20	7.4	.01	.73	.79	.66	.30	.05	.00	.00	.00	.00	-	.75
21	7.5	.10	.80	.84	.70	.34	.06	.00	.00	.00	.00	-	.79
22	7.5	.47	.83	.86	.70	.35	.07	.00	.00	.00	.00	-	.81
23	7.6	.78	.89	.90	.75	.41	.09	.00	.00	.00	.00	-	.85
24	7.7	.91	.97	.94	.75	.33	.04	.00	.00	.00	.00	-	.84

Figure A-8. IONCAP output for propagation condition 8 over the shortest link.