

FREQUENCY 23.175
ANTENNA HEIGHT ABOVE GROUND
ANTENNA DIAMETER
FADE MARGIN
TRANSMITTER POWER
CROSS POLARIZATION FACTOR

DISTANCE (MILES)	FREE SPACE LOSS (dB)
0.5	117.879794943051
1	123.900394856331
1.5	127.422220037444
2	129.92099476961
2.5	131.859195029771
3	133.442819950724
3.5	134.781755743336
4	135.94159468289
4.5	136.964645131838
5	137.879794943051
5.5	138.707648646216
6	139.463419864004
6.5	140.158661989188
7	140.802355656616
7.5	141.401620124165
8	141.96219459617
8.5	142.488773370617
9	142.985245045117
9.5	143.454866962108
10	143.900394856331
10.5	144.324180837729
11	144.728248559495
11.5	145.114351663403
12	145.484019777283
12.5	145.838595116492
13	146.179261902467
13.5	146.507070226231
14	146.822955569895
14.5	147.12775490103
15	147.422220037444
15.5	147.707028819737
16	147.982794509449
16.5	148.250073740609
17	148.509373283896
17.5	148.761155830057
18	149.005844958397
18.5	149.243829424391

Sheet1

19	149.475466875387
19.5	149.701087083581
20	149.92099476961

Sheet1

0.0129449838187702 M PATH LENGTH
 FEET 80 FEET
 38.3222200374443 dB COAXIAL LOSS
 6.04099244875944 dB
 POWER BEAMWIDTH MWIDTH 2.01366414958648 DEGREES
 dB CLIMATE FACTOR 0.25 TERRAIN FACTOR

CT. FADE ROBABILITY (db)	NET PATH Y LOSS (dB)	EARTH CURVATURE FEET	PATH HEIGHT AMSL	
5.72545193550017E-09	-54.0353548681624	4.99999750000125		382
4.58036154840014E-08	-60.0559547814421	9.9999950000025		385
1.54587202258505E-07	-63.5777799625557	14.9999925000038		80
3.66428923872011E-07	-66.0765546947217	19.999990000005		80
7.15681491937522E-07	-68.0147549548828	24.9999875000062		80
1.23669761806804E-06	-69.5983798758353	29.9999850000075		80
1.96383001387656E-06	-70.9373156684476	34.9999825000087		80
2.93143139097609E-06	-72.0971546080013	39.99998000001		80
4.17385446097963E-06	-73.1202050569489	44.9999775000113		80
5.72545193550017E-06	-74.0353548681624	49.9999750000125		80
7.62057652615073E-06	-74.8632085713269	54.9999725000138		80
9.8935809445443E-06	-75.6189797891149	59.999970000015		80
1.25788179022939E-05	-76.3142219142992	64.9999675000162		80
1.57106401110125E-05	-76.9579155817272	69.9999650000175		80
1.93234002823131E-05	-77.5571800492761	74.9999625000187		80
2.34514511278087E-05	-78.1177545212809	79.99996000002		80
2.81291453591123E-05	-78.6443332957279	84.9999575000212		80
3.3390835687837E-05	-79.1408049702285	89.9999550000225		80
3.92708748255957E-05	-79.610426887219	94.9999525000237		80
4.58036154840014E-05	-80.0559547814421	99.999950000025		80
5.30234103746671E-05	-80.4797407628408	104.999947500026		80
6.09646122092058E-05	-80.8838084846066	109.999945000028		80
6.96615736992306E-05	-81.2699115885143	114.999942500029		80
7.91486475563544E-05	-54.8395797023945	119.99994000003		80
8.94601864921902E-05	-55.1941550416032	124.999937500031		80
0.000100630543218351	-55.5348218275788	129.999935000032		80
0.00011269407044645	-55.8626301513422	134.999932500034		80
0.0001256851208881	-56.1785154950068	139.999930000035		80
0.000139638047254914	-56.4833148261416	144.999927500036		80
0.000154587202258505	-56.7777799625557	149.999925000037		80
0.000170566938610486	-57.0625887448479	154.999922500039		80
0.00018761160902247	-57.3383544345605	159.99992000004		80
0.00020575556620607	-57.6056336657202	164.999917500041		80
0.000225033162872899	-57.8649332090075	169.999915000042		80
0.00024547875173457	-58.1167157551679	174.999912500044		80
0.000267126685502696	-58.3614048835082	179.999910000045		80
0.00029001131688889	-58.5993893495023	184.999907500046		80

Sheet1

0.000314166998604765	-58.8310268004986	189.999905000047	80
0.000339628083361935	-59.0566470086924	194.999902500049	80
0.000366428923872011	-59.2765546947217	199.999900000005	80

20 MILES

0.9 dB

EARTH 1.333334
1

RELIABILITY	TY RCVR LEVEL (dBm)	FIRST FRESNEL ZONE	SECOND FRESNEL ZONE	PREDICTED OUTAGES (MIN) PER YEAR
99.999999942746	-29.0353548681624	2.16920233689615	3.06771536436994	0.00300929753729889
99.999999541964	-35.0559547814421	3.0281302818824	4.28242291327075	0.0240743802983911
99.999998454128	-38.5777799625557	3.65956318116963	5.17540388317132	0.08125103350707
99.999996335711	-41.0765546947217	4.16820438524233	5.89473117235271	0.192595042387129
99.999992843185	-43.0147549548828	4.59501342376669	6.49833030317729	0.376162192162361
99.999987633024	-44.5983798758353	4.96115554879109	7.01613346214289	0.65000826805656
99.9999803617	-45.9373156684476	5.27926849490219	7.46601310489968	1.03218905529352
99.999970685686	-47.0971546080013	5.55760584698977	7.85964156313694	1.54076033909703
99.999958261455	-48.1202050569489	5.80189495828601	8.20511853747216	2.19377790469089
99.999942745481	-49.0353548681624	6.01628480964259	8.50831157289579	3.00929753729889
99.999923794235	-49.8632085713269	6.20387589831949	8.77360543468299	4.00537502214482
99.999901064191	-50.6189797891149	6.36703736913995	9.00435059957402	5.20006614445248
99.999874211821	-51.3142219142992	6.50760701068844	9.20314609310982	6.61142668944566
99.999842893599	-51.9579155817272	6.62702260433446	9.37202524520286	8.25751244234816
99.999806765997	-52.5571800492761	6.72641090318011	9.51258152537157	10.1563791883838
99.999765485489	-53.1177545212809	6.80664925831663	9.62605569542814	12.3260827127763
99.999718708546	-53.6443332957279	6.86840884487275	9.71339694034236	14.7846788007495
99.999666091643	-54.1408049702285	6.9121849976814	9.77530576935287	17.5502232375271
99.999607291252	-54.610426887219	6.93831811545702	9.81226357893826	20.6407718083331
99.999541963845	-55.0559547814421	6.94700730873721	9.82455195392118	24.0743802983911
99.999469765896	-55.4797407628408	6.93831811545702	9.81226357893826	27.869104492925
99.999390353878	-55.8838084846066	6.9121849976814	9.77530576935287	32.0430001771586
99.999303384263	-56.2699115885143	6.86840884487275	9.71339694034236	36.6141231363156
99.999208513524	-29.8395797023945	6.80664925831663	9.62605569542814	41.6005291556199
99.999105398135	-30.1941550416032	6.72641090318011	9.51258152537157	47.0202740202952
99.998993694568	-30.5348218275788	6.62702260433446	9.37202524520286	52.8914135155653
99.998873059296	-30.8626301513422	6.50760701068844	9.20314609310982	59.2320034266541
99.998743148791	-31.1785154950068	6.36703736913995	9.00435059957402	66.0600995387852
99.998603619527	-31.4833148261415	6.20387589831949	8.77360543468299	73.3937576371826
99.998454127977	-31.7777799625557	6.01628480964259	8.50831157289579	81.25103350707
99.998294330614	-32.0625887448479	5.80189495828601	8.20511853747216	89.6499829336712
99.99812388391	-32.3383544345605	5.55760584698977	7.85964156313694	98.60866170221
99.997942444338	-32.6056336657202	5.27926849490219	7.46601310489968	108.14512559791
99.997749668371	-32.8649332090075	4.96115554879109	7.01613346214289	118.277430405996
99.997545212483	-33.1167157551679	4.59501342376669	6.49833030317729	129.02363191169
99.997328733145	-33.3614048835082	4.16820438524233	5.89473117235271	140.401785900217
99.997099886831	-33.5993893495023	3.65956318116963	5.17540388317132	152.429948156801

Sheet1

99.9996858330014	-33.8310268004986	3.0281302818824	4.28242291327075	165.126174466665
99.9996603719166	-34.0566470086924	2.16920233689615	3.06771536436994	178.508520615033
99.9996335710761	-34.2765546947217	0	0	192.595042387129