

FREE SPACE SIGNAL LEVEL

Computation of Signal Level 2 METERS AGL W286DJ MINOR CHANGE IN ANTENNA SYSTEM RICHMOND, VIRGINIA

April 23, 2019

Depression Angle, Degrees	Relative Field	ERP Watts	dBk	Distance to the Ground in Kilometers	Free Space Signal
90	0.052	0.6760	-31.7	0.1580	91.2
85	0.063	0.9923	-30.0	0.1586	92.9
80	0.075	1.4063	-28.5	0.1604	94.3
75	0.087	1.8923	-27.2	0.1636	95.4
70	0.106	2.8090	-25.5	0.1681	96.9
65	0.137	4.6923	-23.3	0.1743	98.8
60	0.185	8.5563	-20.7	0.1824	101.0
55	0.233	13.5723	-18.7	0.1929	102.5
50	0.286	20.4490	-16.9	0.2063	103.7
45	0.320	25.6000	-15.9	0.2234	104.0
40	0.332	27.5560	-15.6	0.2458	103.5
35	0.289	20.8803	-16.8	0.2755	101.3
30	0.187	8.7423	-20.6	0.3160	96.3
25	0.083	1.7223	-27.6	0.3739	87.8
20	0.260	16.9000	-17.7	0.4620	95.9
15	0.523	68.3823	-11.7	0.6105	99.6
10	0.767	147.0723	-8.3	0.9099	99.4
5	0.935	218.5563	-6.6	1.8128	95.1
4	0.957	228.9623	-6.4	2.2650	93.4
3	0.974	237.1690	-6.2	3.0190	91.1
2	0.988	244.0360	-6.1	4.5273	87.7
1	0.996	248.0040	-6.1	9.0532	81.7

Notes:

Antenna radiation center above ground (meters): 158

Maximum ERP (watts) at 0° Depression angle: 250

Free Space Signal = $106.92 - 20 \cdot \log(\text{distance in km}) + \text{dBk}$

Relative Field from Kathrein 8 element log periodic custom array