

**FREE SPACE SIGNAL LEVEL**

**Computation of Signal Level  
TWO METERS AGL  
W296CY CP MOD CH 243  
COLUMBIA, PENNSYLVANIA**

**October 11, 2016**

<b>Depression Angle, Degrees</b>	<b>Relative Field</b>	<b>ERP Watts</b>	<b>dBk</b>	<b>Distance to the Ground in Kilometers</b>	<b>Free Space Signal</b>
90	0.048	0.1152	-39.4	0.0620	91.7
85	0.055	0.1513	-38.2	0.0622	92.8
80	0.070	0.2450	-36.1	0.0630	94.8
75	0.097	0.4705	-33.3	0.0642	97.5
70	0.136	0.9248	-30.3	0.0660	100.2
65	0.188	1.7672	-27.5	0.0684	102.7
60	0.252	3.1752	-25.0	0.0716	104.8
55	0.326	5.3138	-22.7	0.0757	106.6
50	0.409	8.3641	-20.8	0.0809	108.0
45	0.495	12.2513	-19.1	0.0877	108.9
40	0.583	16.9945	-17.7	0.0965	109.5
35	0.668	22.3112	-16.5	0.1081	109.7
30	0.746	27.8258	-15.6	0.1240	109.5
25	0.817	33.3745	-14.8	0.1467	108.8
20	0.880	38.7200	-14.1	0.1813	107.6
15	0.932	43.4312	-13.6	0.2395	105.7
10	0.971	47.1421	-13.3	0.3570	102.6
5	0.993	49.3025	-13.1	0.7114	96.8
4	0.994	49.4018	-13.1	0.8888	94.9
3	0.996	49.6008	-13.0	1.1847	92.4
2	0.997	49.7005	-13.0	1.7765	88.9

**Notes:**

Antenna radiation center above ground (meters): 62

Maximum ERP (watts) at 0° Depression angle: 50

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

Relative field based on Aldena AST.03.02.33 Three element yagi single layer custom DA