

Table II
Computation of Signal Level
on the Ground
from Proposed W293AU FM Translator
Derby, Connecticut

November, 2016

Depression Angle, Degrees	Relative Field	ERP Watts	dBk	Distance to the Ground in Kilometers	Free Space Signal
90	0.001	0.0000	-74.6	0.1350	49.8
85	0.003	0.0003	-65.0	0.1355	59.3
80	0.001	0.0000	-74.6	0.1371	49.6
75	0.013	0.0059	-52.3	0.1398	71.7
70	0.037	0.0479	-43.2	0.1437	80.6
65	0.075	0.1969	-37.1	0.1490	86.4
60	0.122	0.5209	-32.8	0.1559	90.2
55	0.173	1.0475	-29.8	0.1648	92.8
50	0.215	1.6179	-27.9	0.1762	94.1
45	0.235	1.9329	-27.1	0.1909	94.2
40	0.216	1.6330	-27.9	0.2100	92.6
35	0.145	0.7359	-31.3	0.2354	88.2
30	0.016	0.0090	-50.5	0.2700	67.8
25	0.167	0.9761	-30.1	0.3194	86.7
20	0.387	5.2419	-22.8	0.3947	92.2
15	0.615	13.2379	-18.8	0.5216	93.8
10	0.814	23.1909	-16.3	0.7774	92.8
5	0.951	31.6540	-15.0	1.5490	88.1

Notes:

Antenna radiation center above ground (meters): 135
Maximum ERP (watts) at 0° Depression angle: 35
Free Space Signal = $106.92 - 20 \cdot \log(\text{distance in km}) + \text{dBk}$
Relative field based on Shively 6813-3D-EF-SS-NX 3 bay, 0.63 wave spaced antenna