

Michigan Community Radio Exhibit E-13

Freespace Interference Study for a given antenna based on Vertical Radiation Pattern

Antenna Make: ETC

Antenna Model: FM-1CP

<u>Depression Angle from Antenna</u>	<u>Antenna Relative Field</u>	<u>ERP Watts</u>	<u>ERP dBk</u>	<u>Distance to Ground from Antenna (km)</u>	<u>Free Space Signal (dBu)</u>	<u>2.5 dB Loss for Reflection</u>	<u>Signal Strength at Ground (dBu)</u>	<u>Circular Distance From Tower (m)</u>
90	0.010	0.001	-60.00	0.1650	62.6	0	62.6	0.00
85	0.100	0.100	-40.00	0.1656	82.5	0	82.5	14.44
80	0.180	0.324	-34.89	0.1675	87.5	0	87.5	29.09
75	0.250	0.625	-32.04	0.1708	90.2	0	90.2	44.21
70	0.340	1.156	-29.37	0.1756	92.7	0	92.7	60.06
65	0.430	1.849	-27.33	0.1821	94.4	0	94.4	76.94
60	0.500	2.500	-26.02	0.1905	95.3	0	95.3	95.26
55	0.570	3.249	-24.88	0.2014	96.0	0	96.0	115.53
50	0.640	4.096	-23.88	0.2154	96.4	0	96.4	138.45
45	0.700	4.900	-23.10	0.2333	96.5	0	96.5	165.00
40	0.770	5.929	-22.27	0.2567	96.5	0	96.5	196.64
35	0.820	6.724	-21.72	0.2877	96.0	0	96.0	235.64
30	0.870	7.569	-21.21	0.3300	95.3	0	95.3	285.79
25	0.900	8.100	-20.92	0.3904	94.2	0	94.2	353.84
20	0.940	8.836	-20.54	0.4824	92.7	0	92.7	453.33
15	0.970	9.409	-20.26	0.6375	90.6	0	90.6	615.79
10	0.980	9.604	-20.18	0.9502	87.2	0	87.2	935.76
5	0.990	9.801	-20.09	1.8932	81.3	0	81.3	1885.96

Distance to Ground Level assumes flat ground or a site where the ground level is above average terrain in all azimuths.

Maximum ERP 10 watts
Radiation Center AG 0.165 km
Radiation Center AG 541.339 ft.

Max dBu to Ground Level

96.46