

ANTENNA / LINE SYSTEM GAINS AND LOSSES

Prepared January 2021

Craven County SBA Inc.

Proposed Facility

Aurora, NC

Channel 201 88.1MHz 0.025kW

Proposed Effective Radiated Power: 0.025kW -16.0206 dBk

Antenna System

FM Broadcast "Dominator" .82 wave Omnidirectional Antenna

Max Power Gain: 2.000 3.010 dBk

ANTENNA INPUT POWER: 0.0158kw -18.0135 dBk

Line & Other Losses

94 feet Commscope AVA5-50FX 7/8"

Loss: 0.312 dBk

foam-dielectric coaxial line @ 0.332 dB/100'

Transmitter Power Output:

0.017kW -17.6956 dBk

Cable Loss per 100 ft at Operating Frequency = 0.332 dB

Cable Length = 94 Ft.

Calculated Loss = 0.3 dB

Power into Cable = 17 Watts

Power out of Cable = 15.8 Watts

Gain of Antenna = 2.0 dBd

ERP of Antenna System = 25.1 Watts

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **35° 18' 8.55" North**
Longitude **76° 47' 39.29" West** (NAD 27)

These coordinates convert to NAD 83 coordinates of
35° 18' 09.16", North, 76° 47' 38.05" West (NAD 83).

Height of antenna radiation center above mean sea level: **41.7 meters AMSL**

Number of Evenly Spaced Radials = **360** 0° is referenced to True North

Results

Calculated HAAT = **30 meters**

Antenna Height Above Average Terrain calculated
using FCC 30 second terrain database (continental USA only)

Individual "Radial HAAT" Values, in meters

0°	36.4 m	120°	36.4 m	240°	14.4 m
1°	36.6 m	121°	36.3 m	241°	12.8 m
2°	36.6 m	122°	36.3 m	242°	11.8 m
3°	36.6 m	123°	36.2 m	243°	11.3 m
4°	36.6 m	124°	36.1 m	244°	11.1 m
5°	36.4 m	125°	36.0 m	245°	11.2 m
6°	36.2 m	126°	35.9 m	246°	11.3 m
7°	36.0 m	127°	35.7 m	247°	11.5 m
8°	36.0 m	128°	35.4 m	248°	11.8 m
9°	36.0 m	129°	35.1 m	249°	12.1 m
10°	36.0 m	130°	34.9 m	250°	12.3 m
11°	36.0 m	131°	34.7 m	251°	12.5 m
12°	36.1 m	132°	34.6 m	252°	12.6 m
13°	36.1 m	133°	34.4 m	253°	12.6 m
14°	36.1 m	134°	34.2 m	254°	12.6 m
15°	36.1 m	135°	34.0 m	255°	12.5 m
16°	36.2 m	136°	33.8 m	256°	12.5 m
17°	36.3 m	137°	33.6 m	257°	12.4 m
18°	36.4 m	138°	33.5 m	258°	12.5 m
19°	36.6 m	139°	33.4 m	259°	12.7 m
20°	36.8 m	140°	33.5 m	260°	13.0 m
21°	37.0 m	141°	33.5 m	261°	13.4 m
22°	37.4 m	142°	33.4 m	262°	13.8 m
23°	37.7 m	143°	33.1 m	263°	14.2 m
24°	37.9 m	144°	32.9 m	264°	14.7 m
25°	38.0 m	145°	32.7 m	265°	14.8 m
26°	38.1 m	146°	32.5 m	266°	14.9 m
27°	38.3 m	147°	32.4 m	267°	15.1 m
28°	38.4 m	148°	32.5 m	268°	15.3 m
29°	38.6 m	149°	32.7 m	269°	15.6 m
30°	38.8 m	150°	32.9 m	270°	15.9 m
31°	39.0 m	151°	33.0 m	271°	16.2 m
32°	39.3 m	152°	33.0 m	272°	16.5 m
33°	39.6 m	153°	33.0 m	273°	16.9 m

34°	40.0 m	154°	33.0 m	274°	17.3 m
35°	40.4 m	155°	33.1 m	275°	17.8 m
36°	40.8 m	156°	33.2 m	276°	18.3 m
37°	41.2 m	157°	33.2 m	277°	19.0 m
38°	41.4 m	158°	33.3 m	278°	19.7 m
39°	41.6 m	159°	33.4 m	279°	20.1 m
40°	41.6 m	160°	33.4 m	280°	20.5 m
41°	41.7 m	161°	33.2 m	281°	20.7 m
42°	41.7 m	162°	33.0 m	282°	20.6 m
43°	41.7 m	163°	32.9 m	283°	20.4 m
44°	41.7 m	164°	32.9 m	284°	19.9 m
45°	41.7 m	165°	32.9 m	285°	19.2 m
46°	41.7 m	166°	32.8 m	286°	18.5 m
47°	41.7 m	167°	32.8 m	287°	17.7 m
48°	41.7 m	168°	32.8 m	288°	16.8 m
49°	41.7 m	169°	32.8 m	289°	16.1 m
50°	41.7 m	170°	32.9 m	290°	15.4 m
51°	41.7 m	171°	33.0 m	291°	14.9 m
52°	41.6 m	172°	33.0 m	292°	14.5 m
53°	41.6 m	173°	33.1 m	293°	14.1 m
54°	41.5 m	174°	33.2 m	294°	13.9 m
55°	41.4 m	175°	33.3 m	295°	14.1 m
56°	41.3 m	176°	33.3 m	296°	14.5 m
57°	41.1 m	177°	33.4 m	297°	15.0 m
58°	40.9 m	178°	33.2 m	298°	15.5 m
59°	40.7 m	179°	33.1 m	299°	16.1 m
60°	40.4 m	180°	32.9 m	300°	16.7 m
61°	40.2 m	181°	32.7 m	301°	17.3 m
62°	40.0 m	182°	32.6 m	302°	17.6 m
63°	39.8 m	183°	32.4 m	303°	17.8 m
64°	39.6 m	184°	32.2 m	304°	18.2 m
65°	39.5 m	185°	32.0 m	305°	18.7 m
66°	39.4 m	186°	31.9 m	306°	19.2 m
67°	39.3 m	187°	31.8 m	307°	19.7 m
68°	39.3 m	188°	31.7 m	308°	20.4 m
69°	39.2 m	189°	31.7 m	309°	21.0 m
70°	39.1 m	190°	31.7 m	310°	21.7 m
71°	39.1 m	191°	31.4 m	311°	22.4 m
72°	39.0 m	192°	31.0 m	312°	23.0 m
73°	39.0 m	193°	30.3 m	313°	23.2 m
74°	38.9 m	194°	29.3 m	314°	23.2 m
75°	38.9 m	195°	28.1 m	315°	23.3 m
76°	38.8 m	196°	26.9 m	316°	23.6 m
77°	38.9 m	197°	25.9 m	317°	23.6 m
78°	38.9 m	198°	25.4 m	318°	23.4 m
79°	38.9 m	199°	25.0 m	319°	23.2 m
80°	38.9 m	200°	24.8 m	320°	23.2 m
81°	38.9 m	201°	24.7 m	321°	23.3 m
82°	38.9 m	202°	24.6 m	322°	23.6 m
83°	38.9 m	203°	24.6 m	323°	23.9 m
84°	39.0 m	204°	24.6 m	324°	24.1 m
85°	38.9 m	205°	24.5 m	325°	24.7 m
86°	38.7 m	206°	24.2 m	326°	25.9 m
87°	38.5 m	207°	23.9 m	327°	27.7 m
88°	38.2 m	208°	23.5 m	328°	29.6 m
89°	38.0 m	209°	22.9 m	329°	31.3 m
90°	37.7 m	210°	22.4 m	330°	32.4 m
91°	37.5 m	211°	21.8 m	331°	33.1 m
92°	37.3 m	212°	21.2 m	332°	33.4 m
93°	37.4 m	213°	20.6 m	333°	33.6 m
94°	37.4 m	214°	19.9 m	334°	33.7 m
95°	37.5 m	215°	19.3 m	335°	33.8 m
96°	37.6 m	216°	18.7 m	336°	33.8 m
97°	37.7 m	217°	18.2 m	337°	33.8 m
98°	37.8 m	218°	17.9 m	338°	33.7 m
99°	37.8 m	219°	17.7 m	339°	33.7 m
100°	37.7 m	220°	17.6 m	340°	33.9 m

101°	37.7 m	221°	17.4 m	341°	34.3 m
102°	37.7 m	222°	17.2 m	342°	35.1 m
103°	37.7 m	223°	17.2 m	343°	36.0 m
104°	37.7 m	224°	17.4 m	344°	36.8 m
105°	37.6 m	225°	17.8 m	345°	37.2 m
106°	37.6 m	226°	18.4 m	346°	37.3 m
107°	37.6 m	227°	19.0 m	347°	37.3 m
108°	37.5 m	228°	19.4 m	348°	37.3 m
109°	37.5 m	229°	19.6 m	349°	37.1 m
110°	37.4 m	230°	19.6 m	350°	37.0 m
111°	37.3 m	231°	19.6 m	351°	36.9 m
112°	37.1 m	232°	19.6 m	352°	36.7 m
113°	37.0 m	233°	19.6 m	353°	36.5 m
114°	36.8 m	234°	19.8 m	354°	36.3 m
115°	36.7 m	235°	19.8 m	355°	36.0 m
116°	36.6 m	236°	19.8 m	356°	35.9 m
117°	36.6 m	237°	19.3 m	357°	36.0 m
118°	36.5 m	238°	18.2 m	358°	36.1 m
119°	36.4 m	239°	16.4 m	359°	36.3 m

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