

Madison Baptist Church Interference Area Madison, AL

The proposed LPFM station will broadcast on channel 300, which is within the 21 kilometers, second-adjacent minimum distance separation of station W298BZ on channel 298. The W298BZ interfering contour at the LPFM tower site is 70.6 dBμ F(50,50). Using the ratio of 100:1 (LPFM to W298BZ) on the second-adjacent channel, the population within the proposed LPFM 110.6 dBμ contour respectively is zero. Applying the antenna manufacturer's vertical radiation pattern the area of interference can be more accurately calculated geometrically, rather than just by using the free space equation alone. This particular antenna is a single bay Nicom BKG77. It was determined from the manufacturer's vertical plan that at 45 degrees below horizontal the interference area would reach down 15.6 meters and extend 15.6 meters horizontally. We have proposed the antenna radiation center will be 30 meters above ground with an Effective Radiated Power of 3 watts. There are no occupied structures or roadways within the interference area of the station. Therefore, the application is in compliance with §73.807(e)(1) *Waiver of the second-adjacent channel separations.*

Figure 1
Minimum Ground Clearance

ERP: 3
AGL: 30

Depression Angle Below Horizontal	Antenna Relative Field	ERP (Watts)	Distance to interfering Contour from Antenna (m)	Horizontal Distance of Interfering contour from tower (m)	Vertical Clearance of Interfering contour above TGL (m)
5	0.999	3.0	36	35.9	26.9
10	0.982	2.9	35	34.5	23.9
15	0.954	2.7	34	32.8	21.2
20	0.918	2.5	33	31.0	18.7
25	0.872	2.3	31	28.1	16.9
30	0.818	2.0	29	25.1	15.5
35	0.758	1.7	27	22.1	14.5
40	0.691	1.4	24	18.4	14.6
45	0.616	1.1	22	15.6	14.4
50	0.538	0.9	20	12.9	14.7
55	0.465	0.6	16	9.2	16.9
60	0.391	0.5	15	7.5	17.0
65	0.313	0.3	11	4.6	20.0
70	0.239	0.2	9	3.1	21.5
75	0.176	0.1	7	1.8	23.2
80	0.129	0.0	1	0.2	29.0
85	0.103	0.0	1	0.1	29.0
90	0.104	0.0	1	0.0	29.0
Minimum Clearance above TGL:					14.4 m

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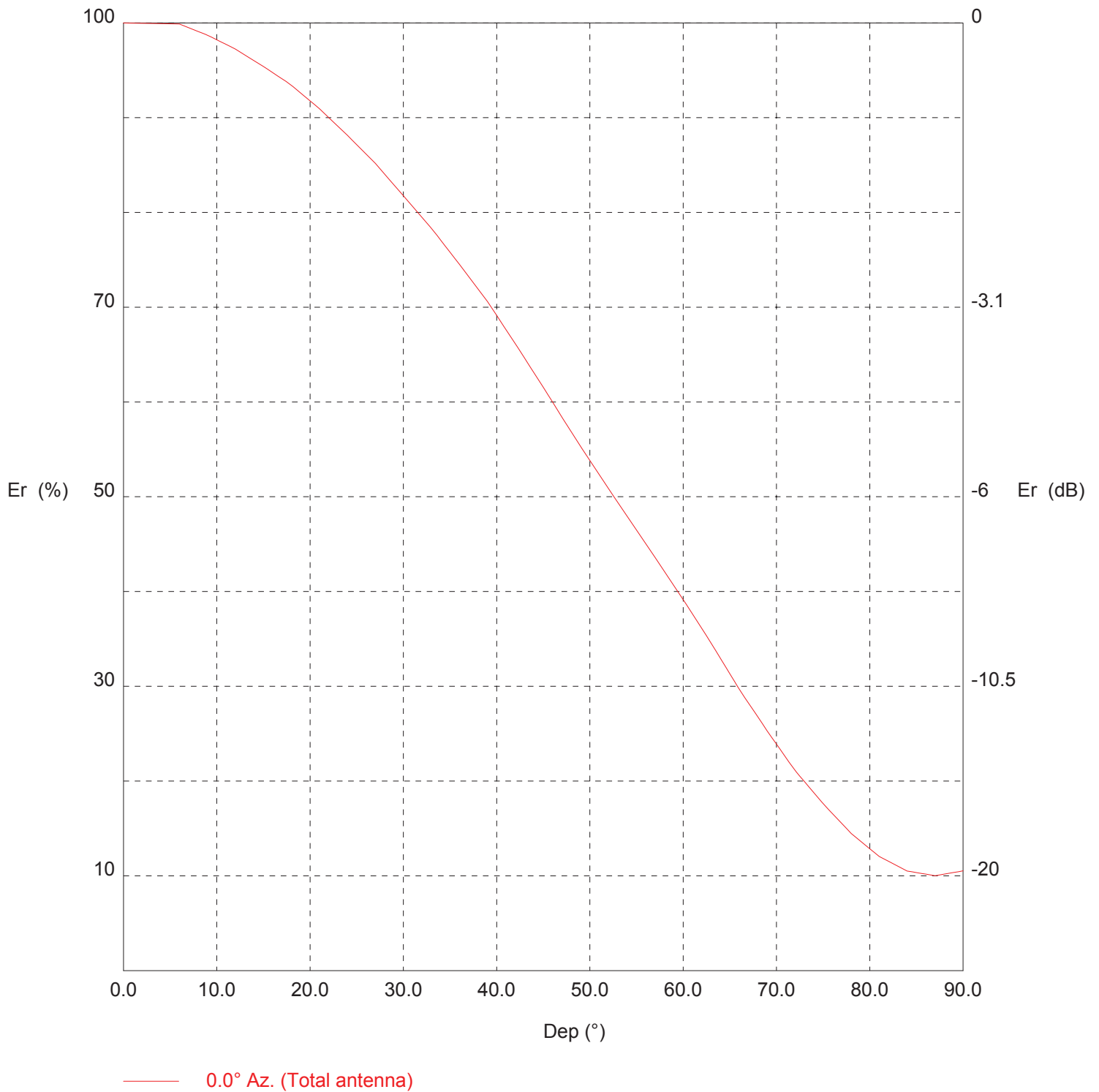
Figure 2 Page 1

TX station:

Site name: 1 BAY ANTENNA

Frequency: 104.10 MHz

Vertical diagram



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Figure 2 Page 2

TX station:

Site name: 1 BAY ANTENNA

Frequency: 104.10 MHz

Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	373.6	30.0	81.8	249.8	60.0	39.1	57.2
0.5	100.0	373.6	30.5	81.2	246.3	60.5	38.4	55.0
1.0	100.0	373.5	31.0	80.6	242.9	61.0	37.6	52.8
1.5	100.0	373.4	31.5	80.1	239.5	61.5	36.8	50.7
2.0	100.0	373.4	32.0	79.5	236.1	62.0	36.1	48.6
2.5	100.0	373.3	32.5	78.9	232.7	62.5	35.3	46.6
3.0	99.9	373.3	33.0	78.3	229.3	63.0	34.5	44.6
3.5	99.9	373.2	33.5	77.7	225.6	63.5	33.7	42.5
4.0	99.9	373.1	34.0	77.1	222.0	64.0	32.9	40.5
4.5	99.9	373.0	34.5	76.4	218.3	64.5	32.1	38.6
5.0	99.9	372.9	35.0	75.8	214.7	65.0	31.3	36.6
5.5	99.9	372.8	35.5	75.2	211.1	65.5	30.5	34.8
6.0	99.9	372.8	36.0	74.5	207.6	66.0	29.7	33.0
6.5	99.7	371.3	36.5	73.9	204.0	66.5	29.0	31.4
7.0	99.5	369.9	37.0	73.2	200.4	67.0	28.2	29.8
7.5	99.3	368.4	37.5	72.6	196.8	67.5	27.5	28.3
8.0	99.1	367.0	38.0	71.9	193.3	68.0	26.8	26.8
8.5	98.9	365.5	38.5	71.3	189.8	68.5	26.0	25.3
9.0	98.7	364.1	39.0	70.6	186.3	69.0	25.3	23.9
9.5	98.5	362.3	39.5	69.9	182.4	69.5	24.6	22.6
10.0	98.2	360.5	40.0	69.1	178.6	70.0	23.9	21.3
10.5	98.0	358.7	40.5	68.4	174.7	70.5	23.2	20.1
11.0	97.7	356.9	41.0	67.6	170.9	71.0	22.5	18.9
11.5	97.5	355.1	41.5	66.9	167.2	71.5	21.8	17.7
12.0	97.2	353.3	42.0	66.1	163.5	72.0	21.1	16.6
12.5	96.9	351.1	42.5	65.4	159.7	72.5	20.5	15.7
13.0	96.6	348.9	43.0	64.6	156.0	73.0	19.9	14.8
13.5	96.3	346.7	43.5	63.9	152.3	73.5	19.3	14.0
14.0	96.0	344.5	44.0	63.1	148.7	74.0	18.8	13.2
14.5	95.7	342.3	44.5	62.3	145.1	74.5	18.2	12.4
15.0	95.4	340.1	45.0	61.6	141.6	75.0	17.6	11.6
15.5	95.1	337.8	45.5	60.8	138.0	75.5	17.1	10.9
16.0	94.7	335.4	46.0	60.0	134.4	76.0	16.6	10.2
16.5	94.4	333.1	46.5	59.2	130.9	76.5	16.0	9.6
17.0	94.1	330.8	47.0	58.4	127.5	77.0	15.5	9.0
17.5	93.8	328.4	47.5	57.6	124.1	77.5	15.0	8.4
18.0	93.4	326.1	48.0	56.8	120.7	78.0	14.5	7.8
18.5	93.0	323.3	48.5	56.1	117.5	78.5	14.1	7.4
19.0	92.6	320.4	49.0	55.3	114.4	79.0	13.7	7.0
19.5	92.2	317.5	49.5	54.6	111.3	79.5	13.3	6.6
20.0	91.8	314.7	50.0	53.8	108.2	80.0	12.9	6.2
20.5	91.4	311.9	50.5	53.1	105.2	80.5	12.5	5.8
21.0	91.0	309.1	51.0	52.3	102.2	81.0	12.0	5.4
21.5	90.5	305.9	51.5	51.6	99.4	81.5	11.8	5.2
22.0	90.0	302.7	52.0	50.8	96.6	82.0	11.5	5.0
22.5	89.5	299.6	52.5	50.1	93.8	82.5	11.3	4.8
23.0	89.1	296.5	53.0	49.4	91.1	83.0	11.0	4.5
23.5	88.6	293.4	53.5	48.6	88.4	83.5	10.8	4.3
24.0	88.1	290.3	54.0	47.9	85.8	84.0	10.5	4.1
24.5	87.6	287.0	54.5	47.2	83.2	84.5	10.4	4.1
25.0	87.2	283.8	55.0	46.5	80.7	85.0	10.3	4.0
25.5	86.7	280.6	55.5	45.7	78.2	85.5	10.3	3.9
26.0	86.2	277.4	56.0	45.0	75.7	86.0	10.2	3.9
26.5	85.7	274.2	56.5	44.3	73.3	86.5	10.1	3.8
27.0	85.2	271.1	57.0	43.6	71.0	87.0	10.0	3.7
27.5	84.6	267.5	57.5	42.8	68.6	87.5	10.1	3.8
28.0	84.0	263.9	58.0	42.1	66.2	88.0	10.2	3.9
28.5	83.5	260.3	58.5	41.4	63.9	88.5	10.3	3.9
29.0	82.9	256.8	59.0	40.6	61.6	89.0	10.4	4.0
29.5	82.3	253.3	59.5	39.9	59.4	89.5	10.4	4.1

Figure 3 Page 1
Aerial Photo of the 15.6 meter Vicinity Surrounding the Proposed Tower Site

