

# **Christian Radio International Radio Chretienne Internationale Interference Area Boonton, NJ**

The proposed LPFM station will broadcast on channel 248, which is within the 67 kilometers, second-adjacent minimum distance separation of station WQHT on channel 246 and the 67 kilometers, second-adjacent minimum distance separation of station WSKQ-FM on channel 250. The WQHT interfering contour at the LPFM tower site is 67.1 dBμ F(50,50) and the WRKQ-FM interfering contour at the LPFM tower site is 65.8 dBμ F(50,50). Using the ratio of 100:1 (LPFM to WQHT & WSKQ-FM) on the second-adjacent channel, the population within the proposed LPFM 107.1 dBμ contour and the LPFM 105.8 dBμ 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 four bay Nicom BKG77. It was determined from the manufacturer's vertical plan that at 45 degrees below horizontal the interference area would reach down 22.6 meters and extend 22.6 meters horizontally. We have proposed the antenna radiation center will be 37 meters above ground with an Effective Radiated Power of 28 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: 28

AGL: 37

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	0.863	20.9	164	163.4	22.7
10	0.517	7.5	99	97.5	19.8
15	0.118	0.4	23	22.2	31.0
20	0.161	0.7	30	28.2	26.7
25	0.243	1.7	47	42.6	17.1
30	0.161	0.7	30	27.2	24.3
35	0.007	0.0	1	0.9	36.5
40	0.120	0.4	23	18.8	23.8
45	0.170	0.8	32	22.6	14.4
50	0.144	0.6	28	18.0	15.6
55	0.075	0.2	16	9.2	23.9
60	0.001	0.0	1	0.5	36.1
65	0.059	0.1	11	4.6	27.0
70	0.089	0.2	16	5.5	22.0
75	0.098	0.3	20	5.2	17.7
80	0.086	0.2	16	2.8	21.2
85	0.076	0.2	16	1.4	21.1
90	0.074	0.2	16	0.0	21.0
Minimum Clearance above TGL:					14.4 m

TX station: NICOM 4 BKG77

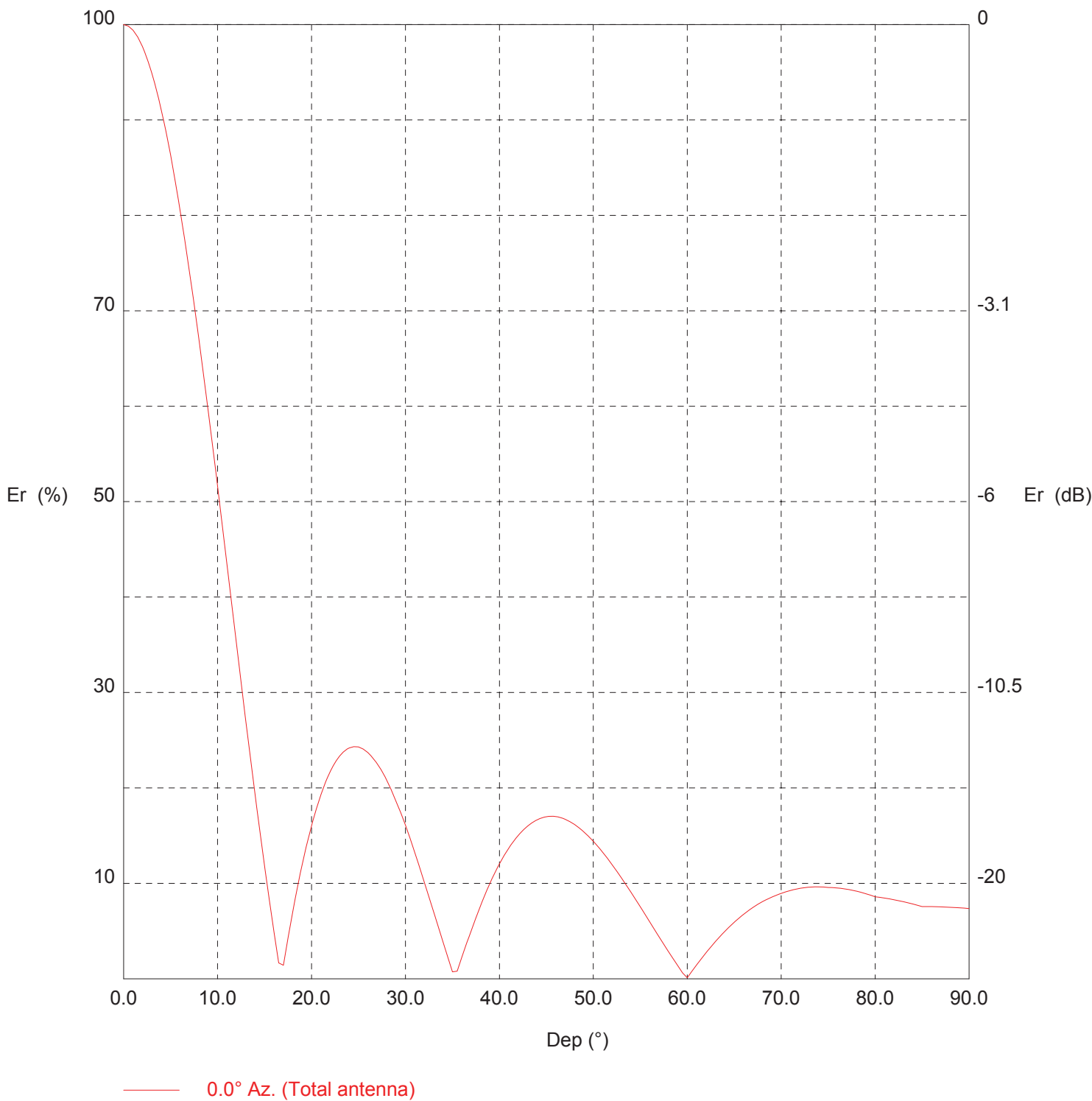
Site name:

Frequency: 91.7 MHz

Figure 2 Page 1

Christian Radio International Radio Chretienne Internationale

Vertical diagram



TX station: NICOM 4 BKG77

Site name:

Frequency: 91.7 MHz

**Figure 2 Page 2****Christian Radio International Radio Chretienne Internationale****Vertical diagram at an azimuth of 0° degrees**

Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)
0.0	100.0	1.79	30.0	16.1	0.05	60.0	0.1	0.00
0.5	99.8	1.78	30.5	14.7	0.04	60.5	0.8	0.00
1.0	99.4	1.77	31.0	13.2	0.03	61.0	1.5	0.00
1.5	98.7	1.74	31.5	11.7	0.02	61.5	2.1	0.00
2.0	97.7	1.71	32.0	10.2	0.02	62.0	2.7	0.00
2.5	96.4	1.66	32.5	8.6	0.01	62.5	3.3	0.00
3.0	94.9	1.61	33.0	7.0	0.01	63.0	3.9	0.00
3.5	93.1	1.55	33.5	5.4	0.01	63.5	4.5	0.00
4.0	91.1	1.48	34.0	3.8	0.00	64.0	5.0	0.00
4.5	88.8	1.41	34.5	2.3	0.00	64.5	5.5	0.01
5.0	86.3	1.33	35.0	0.7	0.00	65.0	5.9	0.01
5.5	83.6	1.25	35.5	0.8	0.00	65.5	6.4	0.01
6.0	80.6	1.16	36.0	2.3	0.00	66.0	6.8	0.01
6.5	77.5	1.07	36.5	3.7	0.00	66.5	7.1	0.01
7.0	74.2	0.98	37.0	5.1	0.00	67.0	7.5	0.01
7.5	70.7	0.89	37.5	6.4	0.01	67.5	7.8	0.01
8.0	67.1	0.80	38.0	7.7	0.01	68.0	8.1	0.01
8.5	63.4	0.72	38.5	8.9	0.01	68.5	8.3	0.01
9.0	59.6	0.63	39.0	10.0	0.02	69.0	8.6	0.01
9.5	55.7	0.55	39.5	11.1	0.02	69.5	8.8	0.01
10.0	51.7	0.48	40.0	12.0	0.03	70.0	8.9	0.01
10.5	47.6	0.40	40.5	12.9	0.03	70.5	9.1	0.01
11.0	43.4	0.34	41.0	13.7	0.03	71.0	9.3	0.02
11.5	39.3	0.28	41.5	14.4	0.04	71.5	9.4	0.02
12.0	35.2	0.22	42.0	15.0	0.04	72.0	9.5	0.02
12.5	31.1	0.17	42.5	15.6	0.04	72.5	9.5	0.02
13.0	27.1	0.13	43.0	16.0	0.05	73.0	9.6	0.02
13.5	23.1	0.10	43.5	16.4	0.05	73.5	9.6	0.02
14.0	19.3	0.07	44.0	16.7	0.05	74.0	9.6	0.02
14.5	15.5	0.04	44.5	16.9	0.05	74.5	9.6	0.02
15.0	11.8	0.03	45.0	17.0	0.05	75.0	9.6	0.02
15.5	8.3	0.01	45.5	17.0	0.05	75.5	9.6	0.02
16.0	4.9	0.00	46.0	17.0	0.05	76.0	9.5	0.02
16.5	1.7	0.00	46.5	16.9	0.05	76.5	9.5	0.02
17.0	1.4	0.00	47.0	16.7	0.05	77.0	9.4	0.02
17.5	4.3	0.00	47.5	16.5	0.05	77.5	9.3	0.02
18.0	7.1	0.01	48.0	16.2	0.05	78.0	9.2	0.02
18.5	9.6	0.02	48.5	15.8	0.04	78.5	9.0	0.01
19.0	11.9	0.03	49.0	15.4	0.04	79.0	8.9	0.01
19.5	14.1	0.04	49.5	14.9	0.04	79.5	8.8	0.01
20.0	16.1	0.05	50.0	14.4	0.04	80.0	8.6	0.01
20.5	17.8	0.06	50.5	13.8	0.03	80.5	8.5	0.01
21.0	19.3	0.07	51.0	13.3	0.03	81.0	8.5	0.01
21.5	20.6	0.08	51.5	12.6	0.03	81.5	8.4	0.01
22.0	21.7	0.08	52.0	12.0	0.03	82.0	8.3	0.01
22.5	22.6	0.09	52.5	11.3	0.02	82.5	8.2	0.01
23.0	23.3	0.10	53.0	10.6	0.02	83.0	8.1	0.01
23.5	23.9	0.10	53.5	9.8	0.02	83.5	8.0	0.01
24.0	24.2	0.10	54.0	9.1	0.01	84.0	7.8	0.01
24.5	24.3	0.11	54.5	8.3	0.01	84.5	7.7	0.01
25.0	24.3	0.11	55.0	7.5	0.01	85.0	7.6	0.01
25.5	24.1	0.10	55.5	6.7	0.01	85.5	7.6	0.01
26.0	23.7	0.10	56.0	6.0	0.01	86.0	7.6	0.01
26.5	23.2	0.10	56.5	5.2	0.00	86.5	7.5	0.01
27.0	22.5	0.09	57.0	4.4	0.00	87.0	7.5	0.01
27.5	21.7	0.08	57.5	3.6	0.00	87.5	7.5	0.01
28.0	20.8	0.08	58.0	2.8	0.00	88.0	7.5	0.01
28.5	19.8	0.07	58.5	2.1	0.00	88.5	7.5	0.01
29.0	18.6	0.06	59.0	1.3	0.00	89.0	7.4	0.01
29.5	17.4	0.05	59.5	0.6	0.00	89.5	7.4	0.01

**Figure 3**  
**Aerial Photo of the 22.6 meter Vicinity Surrounding the Proposed Tower Site**

