

W223CA ALLOCATION STUDY

THE PROPOSED FM TRANSLATOR IS LOCATED WITHIN THE PROTECTED 60 DBU CONTOUR OF SECOND ADJACENT WRPW, CHANNEL 225, COLFAX, ILLINOIS. AND THE PROTECTED 60 DBU CONTOUR OF SECOND ADJACENT W221CY, BLOOMINGTON, ILLINOIS.

THE PREDICTED F(50-50) FIELD STRENGTH OF WRPW AT THE PROPOSED TRANSLATOR SITE IS 63 DBU. THEREFORE, THE RESPECTIVE PREDICTED INTERFERING CONTOUR GENERATED BY THE PROPOSED FM TRANSLATOR IS 103 DBU.

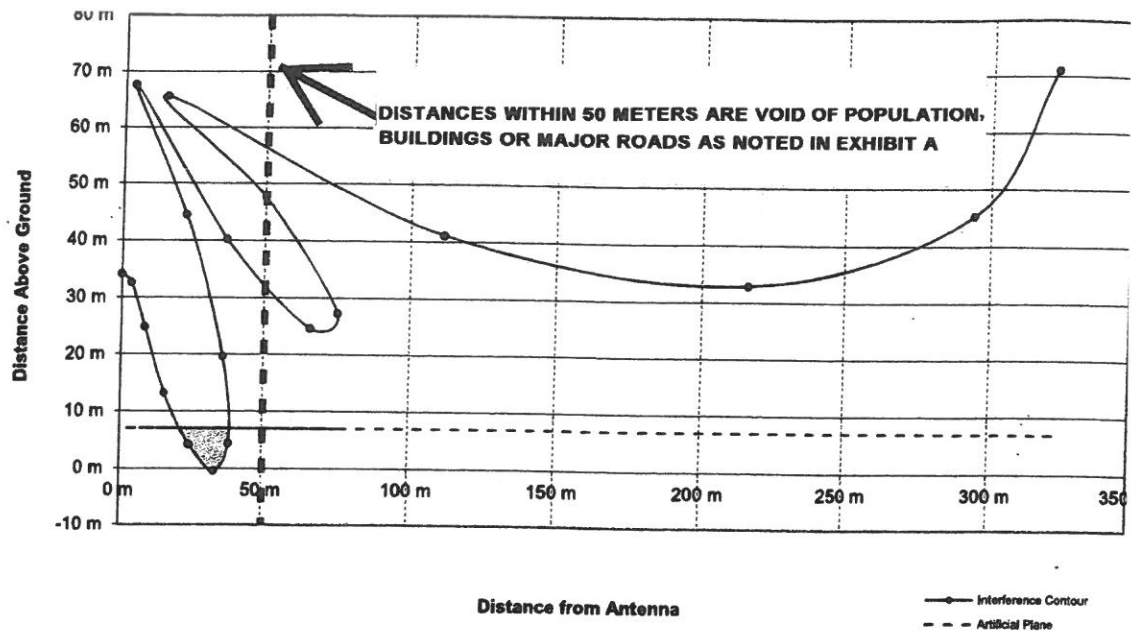
THE PREDICTED F(50-50) FIELD STRENGTH OF W221CY AT THE PROPOSED TRANSLATOR SITE IS 69 DBU. THEREFORE, THE RESPECTIVE PREDICTED INTERFERING CONTOUR GENERATED BY THE PROPOSED FM TRANSLATOR IS 109 DBU.

SINCE W221CY'S INTERFERING COUNTOUR IS HIGHER THEN WRPW'S- WE WILL ONLY LOOK AT WRPW:

THE INTERFERING CONTOUR OF THE PROPOSED TRANSLATOR EXTENDS LESS THAN 50 METERS FROM THE PROPOSED ANTENNA TOWER. SINCE THE AREA AROUND THE PROPOSED TOWER IS UNPOPULATED-OVERLAP DOES NOT REACH ANY POPULATION (AS NOTED IN EXHIBIT 13.A).THEREFORE, 2820 COMMUNICATIONS, INC. RESPECTFULLY REQUESTS A WAIVER OF C.F.R. 74.1204 BASED UPON NO POPULATION WITHIN THE AREA OF PREDICTED INTERFERENCE. AN ALLOCATION STUDY IS ATTACHED.

CHANNEL REPORT

Callsign	State	City	Freq	Channel	ERP_w	Class	Status	Distance_km	Sep	Clr	
W221CY	IL		NORMAL	92.1	221	250.0	D	LIC	5.06	0.00	-11.49
WRPW	IL		COLFAX	92.9	225	6000.0	A	LIC	24.23	0.00	-2.87



Proposed Antenna: BKG88 Three Bay 0.85λ Spaced Proposed Power: 0.25 kW Antenna Height AGL: 71 meters Interference Contour: 103 dBu f(50:10) Artificial Ground Plane Height: 7 meters Distance (Free Space) Equation: $= (10^{((106.92 - \text{desired dBu}) + [\text{ERP in dBk}] / 20))} * 1000$ Field Strength (dBu) Equation: $= 106.92 - (20 * (\text{LOG}_{10}[\text{DistMeters} / 1000])) + [\text{ERP in dBk}]$								
Depression Angle	Antenna Relative Field	ERP in kW	ERP in dBk	Distance from Ant. to Interference Contour	Distance from Ant. to Artificial Plane	Field Strength in dBu @ Artificial Plane	Distance from Ant. to Ground Level	Field Strength in dBu @ Ground Level
0°	1.000	0.250	-6.02	323.57 m	infinite	---	---	---
-5°	0.913	0.208	-6.81	295.42 m	734.32 m	102.79 dBu	814.63 m	101.89 dBu
-10°	0.678	0.115	-9.40	219.38 m	368.56 m	106.19 dBu	408.87 m	105.29 dBu
-15°	0.357	0.032	-14.97	115.51 m	247.28 m	104.09 dBu	274.32 m	103.19 dBu
-20°	0.049	0.001	-32.22	15.85 m	187.12 m	89.26 dBu	207.59 m	88.36 dBu
-25°	0.171	0.007	-21.36	55.33 m	151.44 m	101.95 dBu	168.00 m	101.05 dBu
-30°	0.270	0.018	-17.39	87.36 m	128.00 m	107.38 dBu	142.00 m	106.48 dBu
-35°	0.250	0.016	-18.06	80.89 m	111.58 m	107.91 dBu	123.78 m	107.00 dBu
-40°	0.148	0.005	-22.62	47.89 m	99.57 m	104.34 dBu	110.46 m	103.44 dBu
-45°	0.015	0.000	-42.50	4.85 m	90.51 m	85.29 dBu	100.41 m	84.39 dBu
-50°	0.107	0.003	-25.43	34.62 m	83.55 m	103.05 dBu	92.68 m	102.15 dBu
-55°	0.194	0.009	-20.26	62.77 m	78.13 m	108.80 dBu	86.67 m	107.90 dBu
-60°	0.238	0.014	-18.49	77.01 m	73.90 m	111.06 dBu	81.98 m	110.16 dBu
-65°	0.244	0.015	-18.27	78.95 m	70.62 m	111.67 dBu	78.34 m	110.77 dBu
-70°	0.220	0.012	-19.17	71.19 m	68.11 m	111.08 dBu	75.56 m	110.18 dBu
-75°	0.185	0.009	-20.68	59.86 m	66.26 m	109.82 dBu	73.50 m	108.92 dBu
-80°	0.145	0.005	-22.79	46.92 m	64.99 m	107.87 dBu	72.10 m	106.97 dBu
-85°	0.119	0.004	-24.51	38.50 m	64.24 m	106.25 dBu	71.27 m	105.35 dBu
-90°	0.114	0.003	-24.88	36.89 m	64.00 m	105.91 dBu	71.00 m	105.01 dBu

EXHIBIT A



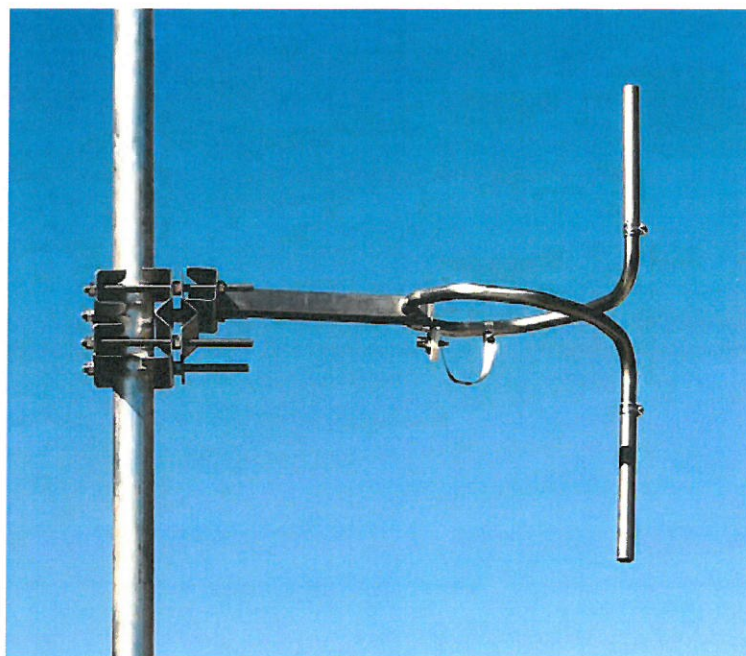
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BKG 88

Low Power Narrowband FMCircularly Polarized Antenna

TECHNICAL SPECIFICATIONS

Antenna Type: circular polarization dipole**Front-to-Back Ratio:** 3 dB**Frequency Range:** 87.5 - 108 MHz**Polarization:** vertical and horizontal**Gain:** -3 dBd (referred to half-wave dipole)**Bandwidth:** 500 KHz max**VSWR:** 1.1:1 tuned in factory**H Plane:** omni-directional ± 1.5 dB (with a 4" mast) Packing 16"x16"x39" (406x406x991mm)**V Plane:** omni-directional ± 3 dB (with a 4" mast)**Impedance:** 50 Ohms**Connector:** N type female**Power Rating:** 500 Watts max.**Wind Load:** 8 Lbs (3.6 kg)**Wind Velocity:** 119 mph (190 km/h)**Wind Surface:** 0.3 ft² (0.04 m²)**Lightning Protection:** all parts grounded**Material:** (external) stainless steel**Mounting:** from 2" to 4" diameter pole**Weight:** 7.7 Lbs (3.5 kg)**Average Dimensions:** 15"x15"x38" (381x381x965mm) depending on tuned frequency

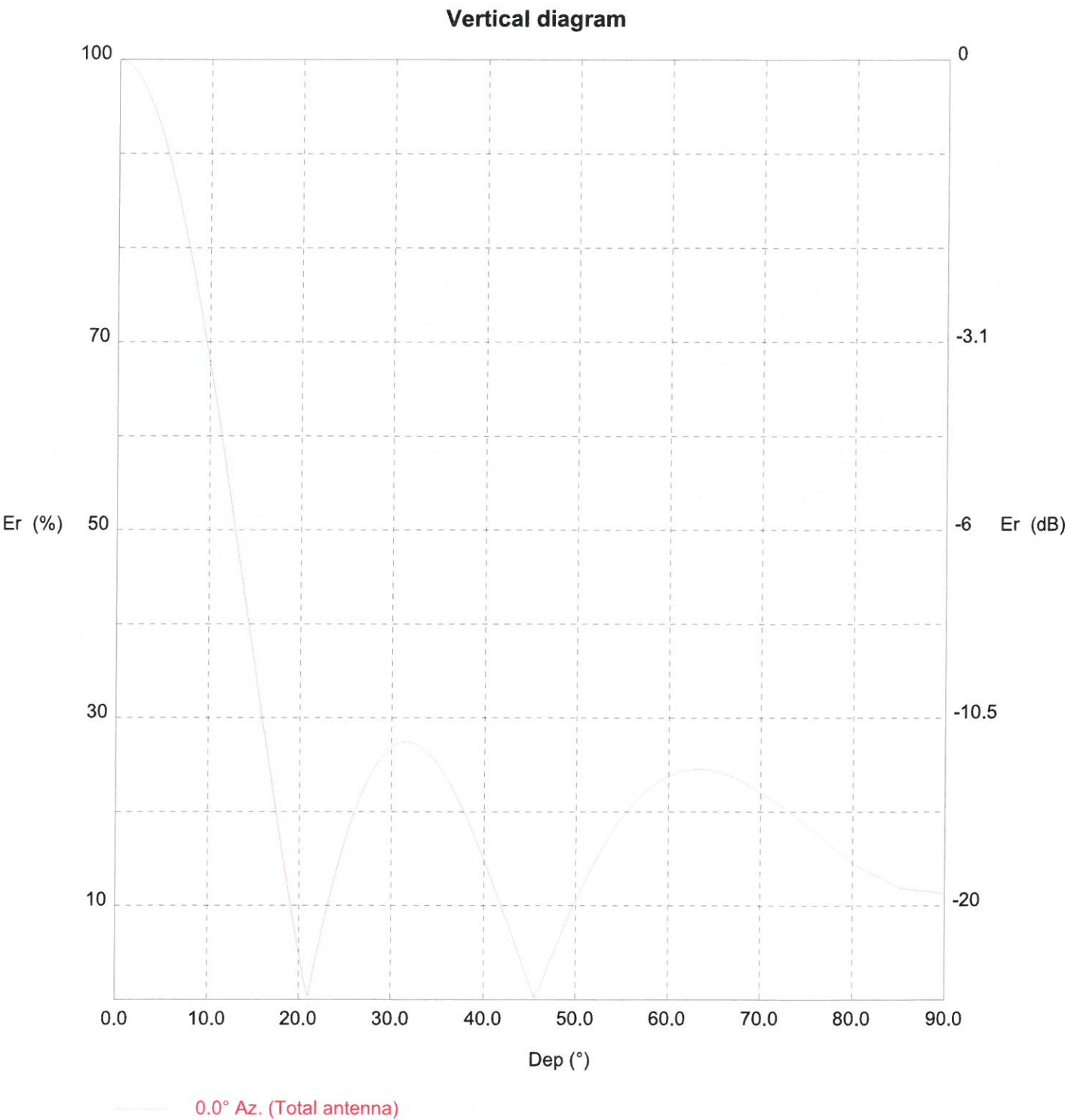
Azimuth and Elevation Pattern Study

Note: This Study is for Reference Only; It is Calculated Based on a Generic Frequency and for a Single and 2 Bay Configuration. For a Multiple Bay Configuration Study on Specific Frequencies, More Information Will Be Required and a Fee Will be Charged as This is Considered a Custom Request.

[BKG 88 single bay Antenna.pdf](#)[BKG 88 2- bay Antenna 0.85 Wavelength.pdf](#)[BKG 88 2- bay Antenna 0.5 Wavelength.pdf](#)[BKG 88 3- bay Antenna 0.85 Wavelength.pdf](#)[BKG 88 3- bay Antenna 0.5 Wavelength.pdf](#)[BKG 88 4- bay Antenna 0.85 Wavelength.pdf](#)[BKG 88 4- bay Antenna 0.5 Wavelength.pdf](#)[BKG 88 6- bay Antenna 0.85 Wavelength.pdf](#)

TX station: BKG88/3 GENERIC
Frequency: 100.00 MHz

Site name:



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Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)
0.0	100.0	1.34	30.0	27.0	0.10	60.0	23.8	0.08
0.5	99.9	1.34	30.5	27.3	0.10	60.5	24.0	0.08
1.0	99.6	1.33	31.0	27.4	0.10	61.0	24.2	0.08
1.5	99.2	1.32	31.5	27.5	0.10	61.5	24.3	0.08
2.0	98.5	1.30	32.0	27.4	0.10	62.0	24.5	0.08
2.5	97.8	1.28	32.5	27.3	0.10	62.5	24.5	0.08
3.0	96.8	1.26	33.0	27.0	0.10	63.0	24.6	0.08
3.5	95.7	1.23	33.5	26.6	0.09	63.5	24.6	0.08
4.0	94.4	1.19	34.0	26.2	0.09	64.0	24.5	0.08
4.5	92.9	1.16	34.5	25.6	0.09	64.5	24.5	0.08
5.0	91.3	1.12	35.0	25.0	0.08	65.0	24.4	0.08
5.5	89.5	1.07	35.5	24.2	0.08	65.5	24.3	0.08
6.0	87.6	1.03	36.0	23.4	0.07	66.0	24.1	0.08
6.5	85.5	0.98	36.5	22.5	0.07	66.5	23.9	0.08
7.0	83.3	0.93	37.0	21.6	0.06	67.0	23.7	0.08
7.5	81.0	0.88	37.5	20.6	0.06	67.5	23.5	0.07
8.0	78.6	0.83	38.0	19.5	0.05	68.0	23.3	0.07
8.5	76.0	0.77	38.5	18.4	0.05	68.5	23.0	0.07
9.0	73.4	0.72	39.0	17.3	0.04	69.0	22.7	0.07
9.5	70.6	0.67	39.5	16.1	0.03	69.5	22.4	0.07
10.0	67.8	0.62	40.0	14.8	0.03	70.0	22.0	0.07
10.5	64.7	0.56	40.5	13.6	0.02	70.5	21.7	0.06
11.0	61.6	0.51	41.0	12.3	0.02	71.0	21.4	0.06
11.5	58.5	0.46	41.5	11.0	0.02	71.5	21.1	0.06
12.0	55.3	0.41	42.0	9.6	0.01	72.0	20.8	0.06
12.5	52.1	0.36	42.5	8.3	0.01	72.5	20.4	0.06
13.0	48.8	0.32	43.0	6.9	0.01	73.0	20.1	0.05
13.5	45.5	0.28	43.5	5.6	0.00	73.5	19.7	0.05
14.0	42.2	0.24	44.0	4.2	0.00	74.0	19.3	0.05
14.5	38.9	0.20	44.5	2.9	0.00	74.5	18.9	0.05
15.0	35.7	0.17	45.0	1.5	0.00	75.0	18.5	0.05
15.5	32.4	0.14	45.5	0.2	0.00	75.5	18.1	0.04
16.0	29.1	0.11	46.0	1.1	0.00	76.0	17.8	0.04
16.5	25.9	0.09	46.5	2.4	0.00	76.5	17.4	0.04
17.0	22.7	0.07	47.0	3.6	0.00	77.0	17.0	0.04
17.5	19.6	0.05	47.5	4.9	0.00	77.5	16.6	0.04
18.0	16.5	0.04	48.0	6.1	0.00	78.0	16.2	0.04
18.5	13.5	0.02	48.5	7.3	0.01	78.5	15.8	0.03
19.0	10.5	0.01	49.0	8.5	0.01	79.0	15.4	0.03
19.5	7.7	0.01	49.5	9.6	0.01	79.5	14.9	0.03
20.0	4.9	0.00	50.0	10.7	0.02	80.0	14.5	0.03
20.5	2.2	0.00	50.5	11.7	0.02	80.5	14.3	0.03
21.0	0.4	0.00	51.0	12.7	0.02	81.0	14.0	0.03
21.5	2.9	0.00	51.5	13.7	0.03	81.5	13.8	0.03
22.0	5.3	0.00	52.0	14.7	0.03	82.0	13.5	0.02
22.5	7.5	0.01	52.5	15.6	0.03	82.5	13.3	0.02
23.0	9.7	0.01	53.0	16.4	0.04	83.0	13.0	0.02
23.5	11.7	0.02	53.5	17.2	0.04	83.5	12.7	0.02
24.0	13.7	0.02	54.0	18.0	0.04	84.0	12.5	0.02
24.5	15.5	0.03	54.5	18.7	0.05	84.5	12.2	0.02
25.0	17.1	0.04	55.0	19.4	0.05	85.0	11.9	0.02
25.5	18.7	0.05	55.5	20.1	0.05	85.5	11.9	0.02
26.0	20.1	0.05	56.0	20.7	0.06	86.0	11.8	0.02
26.5	21.4	0.06	56.5	21.2	0.06	86.5	11.8	0.02
27.0	22.6	0.07	57.0	21.7	0.06	87.0	11.7	0.02
27.5	23.6	0.07	57.5	22.2	0.07	87.5	11.6	0.02
28.0	24.5	0.08	58.0	22.6	0.07	88.0	11.6	0.02
28.5	25.3	0.09	58.5	22.9	0.07	88.5	11.5	0.02
29.0	26.0	0.09	59.0	23.3	0.07	89.0	11.5	0.02
29.5	26.6	0.09	59.5	23.5	0.07	89.5	11.4	0.02