

DELAWDER COMMUNICATIONS, INC.

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ENGINEERING REPORT

K212GK, San Antonio, TX, to Channel 213D Site-Move Minor Mod

ENGINEERING STATEMENT

PROTECTION TO KSYM-FM AND KYFS

All contour non-overlap protection requirements are met with the exception of KSYM-FM, San Antonio, TX (211A) and KYFS, San Antonio, TX (215C1), discussed below.

KSYM-FM (16 kilometers at 294 degrees True) and KYFS (33 kilometers at 18 degrees True) are second adjacent-channel to the proposed channel 213D facility. The 60 dBu F50,50 service contour of each extends well beyond the proposed 213D transmitter site. Using the well-established *Living Way Ministries* Methodology, no actual interference to any population is predicted to exist to KSYM-FM or KYFS.

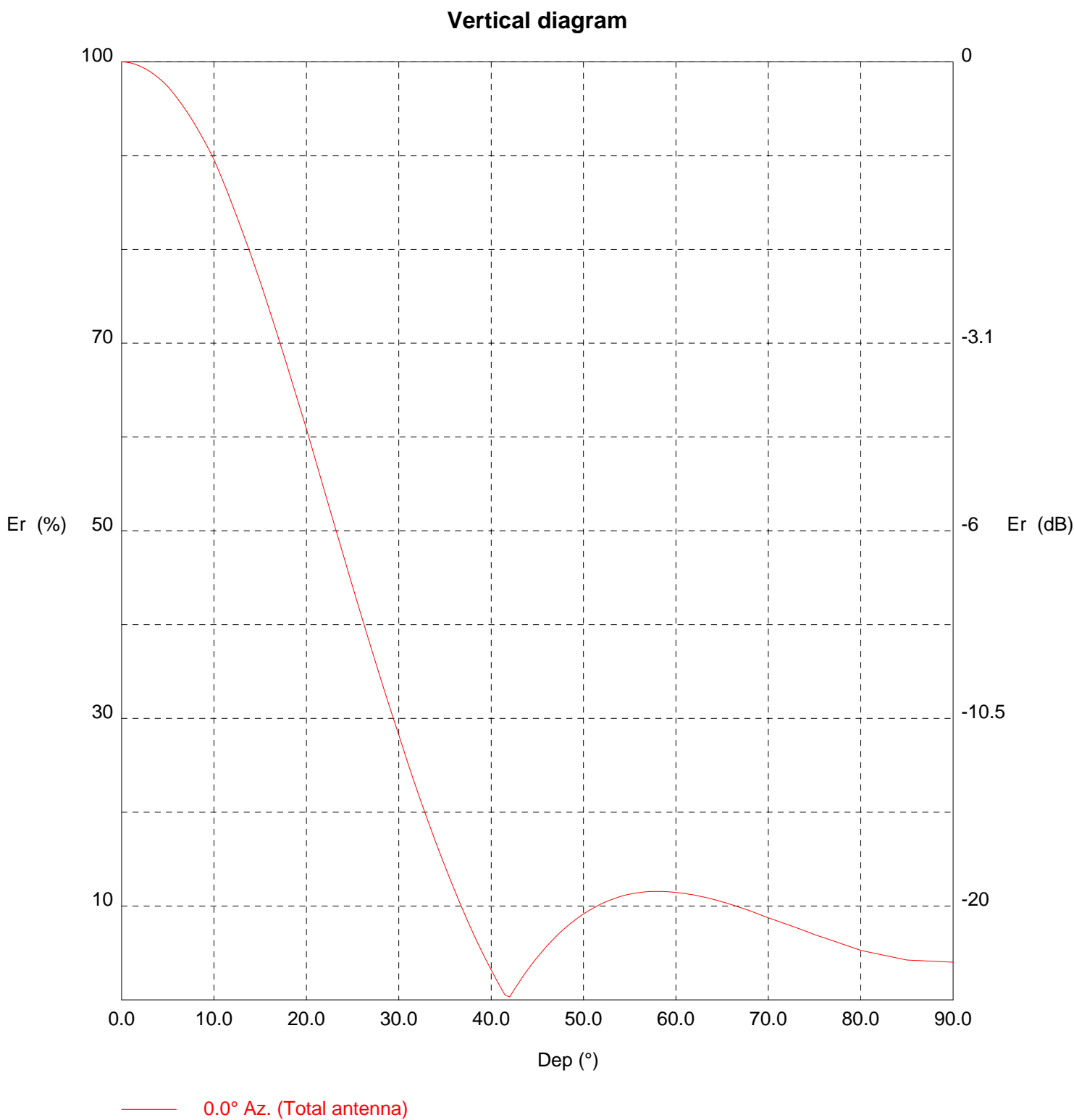
Note that a rule waiver of Section 74.1204 for this second/third adjacent-channel protection using the well-established *Living Way Ministries* Methodology is respectfully requested if such a rule waiver is deemed necessary for protection to any station.

The F50,50 signal strength from KSYM-FM at the proposed 213D transmitter site is at least 66 dBu (the “desired” signal of KSYM-FM). The F50,50 signal strength from KYFS at the proposed 213D transmitter site is at least 73 dBu (the other “desired” signal of KYFS). The second/third adjacent-channel protection of Section 74.1204 is an undesired-to-desired (“U/D”) dB signal strength ratio of 40:1. Therefore, predicted interference to KSYM-FM and KYFS from the proposed 213D facility is a signal of greater than or equal to 106 dBu.

A vertical plane relative field pattern for the proposed Nicom BKG-77 three-bay (halfwave spaced) antenna is attached. The attached table (requested for use by the FCC for these studies) demonstrates that the 106 dBu interference signal is predicted to be at least 34 meters above ground level. Therefore, pursuant to Section 74.1204(d) of the FCC Rules, KSYM-FM and KYFS are adequately protected by the proposed facility.

TX station: BKG77/3 GENERIC
Frequency: 100.00 MHz

Site name:



TX station: BKG77/3 GENERIC

Site name:

Frequency: 100.00 MHz

Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)
0.0	100.0	1.37	30.0	28.2	0.11	60.0	11.4	0.02
0.5	100.0	1.37	30.5	26.7	0.10	60.5	11.4	0.02
1.0	99.9	1.37	31.0	25.2	0.09	61.0	11.3	0.02
1.5	99.7	1.36	31.5	23.7	0.08	61.5	11.2	0.02
2.0	99.5	1.36	32.0	22.3	0.07	62.0	11.2	0.02
2.5	99.3	1.35	32.5	20.9	0.06	62.5	11.1	0.02
3.0	99.0	1.34	33.0	19.5	0.05	63.0	11.0	0.02
3.5	98.7	1.34	33.5	18.1	0.05	63.5	10.8	0.02
4.0	98.3	1.32	34.0	16.8	0.04	64.0	10.7	0.02
4.5	97.8	1.31	34.5	15.5	0.03	64.5	10.6	0.02
5.0	97.4	1.30	35.0	14.2	0.03	65.0	10.4	0.01
5.5	96.8	1.28	35.5	13.0	0.02	65.5	10.3	0.01
6.0	96.2	1.27	36.0	11.8	0.02	66.0	10.1	0.01
6.5	95.5	1.25	36.5	10.6	0.02	66.5	10.0	0.01
7.0	94.8	1.23	37.0	9.4	0.01	67.0	9.8	0.01
7.5	94.0	1.21	37.5	8.3	0.01	67.5	9.7	0.01
8.0	93.2	1.19	38.0	7.2	0.01	68.0	9.5	0.01
8.5	92.4	1.17	38.5	6.1	0.01	68.5	9.3	0.01
9.0	91.5	1.15	39.0	5.1	0.00	69.0	9.1	0.01
9.5	90.6	1.12	39.5	4.1	0.00	69.5	8.9	0.01
10.0	89.6	1.10	40.0	3.2	0.00	70.0	8.7	0.01
10.5	88.4	1.07	40.5	2.3	0.00	70.5	8.6	0.01
11.0	87.2	1.04	41.0	1.4	0.00	71.0	8.4	0.01
11.5	86.0	1.01	41.5	0.5	0.00	71.5	8.2	0.01
12.0	84.7	0.98	42.0	0.3	0.00	72.0	8.1	0.01
12.5	83.4	0.95	42.5	1.1	0.00	72.5	7.9	0.01
13.0	82.1	0.92	43.0	1.8	0.00	73.0	7.7	0.01
13.5	80.8	0.89	43.5	2.6	0.00	73.5	7.5	0.01
14.0	79.4	0.86	44.0	3.3	0.00	74.0	7.3	0.01
14.5	78.0	0.83	44.5	3.9	0.00	74.5	7.1	0.01
15.0	76.6	0.80	45.0	4.5	0.00	75.0	6.9	0.01
15.5	75.1	0.77	45.5	5.1	0.00	75.5	6.8	0.01
16.0	73.5	0.74	46.0	5.7	0.00	76.0	6.6	0.01
16.5	72.0	0.71	46.5	6.2	0.01	76.5	6.5	0.01
17.0	70.4	0.68	47.0	6.7	0.01	77.0	6.3	0.01
17.5	68.9	0.65	47.5	7.2	0.01	77.5	6.1	0.01
18.0	67.3	0.62	48.0	7.7	0.01	78.0	6.0	0.00
18.5	65.7	0.59	48.5	8.1	0.01	78.5	5.8	0.00
19.0	64.1	0.56	49.0	8.5	0.01	79.0	5.6	0.00
19.5	62.5	0.54	49.5	8.8	0.01	79.5	5.4	0.00
20.0	60.9	0.51	50.0	9.2	0.01	80.0	5.3	0.00
20.5	59.2	0.48	50.5	9.5	0.01	80.5	5.2	0.00
21.0	57.5	0.45	51.0	9.8	0.01	81.0	5.1	0.00
21.5	55.8	0.43	51.5	10.0	0.01	81.5	5.0	0.00
22.0	54.1	0.40	52.0	10.3	0.01	82.0	4.9	0.00
22.5	52.4	0.38	52.5	10.5	0.02	82.5	4.8	0.00
23.0	50.7	0.35	53.0	10.7	0.02	83.0	4.7	0.00
23.5	49.1	0.33	53.5	10.9	0.02	83.5	4.6	0.00
24.0	47.4	0.31	54.0	11.0	0.02	84.0	4.4	0.00
24.5	45.7	0.29	54.5	11.2	0.02	84.5	4.3	0.00
25.0	44.1	0.27	55.0	11.3	0.02	85.0	4.2	0.00
25.5	42.4	0.25	55.5	11.4	0.02	85.5	4.2	0.00
26.0	40.8	0.23	56.0	11.4	0.02	86.0	4.2	0.00
26.5	39.2	0.21	56.5	11.5	0.02	86.5	4.2	0.00
27.0	37.5	0.19	57.0	11.5	0.02	87.0	4.1	0.00
27.5	35.9	0.18	57.5	11.6	0.02	87.5	4.1	0.00
28.0	34.4	0.16	58.0	11.6	0.02	88.0	4.1	0.00
28.5	32.8	0.15	58.5	11.6	0.02	88.5	4.1	0.00
29.0	31.3	0.13	59.0	11.5	0.02	89.0	4.1	0.00
29.5	29.7	0.12	59.5	11.5	0.02	89.5	4.0	0.00

74.1204(d) Showing

San Antonio, TX 213D
NICOM BKG-77 3 Bay (half)

ERP (kw)	0.25
Height of Antenna above Ground (m)	150
Translator's IX Contour	106

<u>Depression Angle from Horizon</u>	<u>Antenna Relative Field</u>	<u>ERP (kw) from the Antenna RF</u>	<u>Dist. To IX Contour (m)</u>	<u>Height IX Contour Above Ground (m)</u>
0	1	0.2500	555.8659	150.000
5	0.974	0.2372	541.4134	102.813
10	0.896	0.2007	498.0558	63.514
15	0.766	0.1467	425.7933	39.797
20	0.609	0.0927	338.5223	34.219
25	0.441	0.0486	245.1368	46.401
30	0.282	0.0199	156.7542	71.623
35	0.142	0.0050	78.9330	104.726
40	0.032	0.0003	17.7877	138.566
45	0.045	0.0005	25.0140	132.312
50	0.092	0.0021	51.1397	110.825
55	0.113	0.0032	62.8128	98.547
60	0.114	0.0032	63.3687	95.121
65	0.104	0.0027	57.8100	97.606
70	0.087	0.0019	48.3603	104.556
75	0.069	0.0012	38.3547	112.952
80	0.053	0.0007	29.4609	120.987
85	0.042	0.0004	23.3464	126.742
90	0.04	0.0004	22.2346	127.765

Note: Input the ERP, Height of the antenna above Ground, the Calculated Translator IX contour, and the specified Antenna Relative Field Pat