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ENGINEERING REPORT

K283CH, Houston, TX, Channel 283D FM Translator Minor Mod

ENGINEERING STATEMENT

PROTECTION TO KAMA-FM AND KRBE

All contour non-overlap protection requirements are met with the exception of Houston, TX stations KRBE (281C) and KAMA-FM (285C2), discussed below.

KAMA-FM (2.4 kilometers at 97 degrees True) and KRBE (24.8 kilometers at 215 degrees True) are second adjacent-channel to the proposed channel 283D facility. The 60 dBu F50,50 service contour extends well beyond the proposed 283D transmitter site. Using the well-established *Living Way Ministries* Methodology, no actual interference to any population is predicted to exist to KAMA-FM or KRBE.

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 KAMA-FM at the proposed 283D transmitter site is at least 100 dBu (the "desired" signal). The F50,50 signal strength from KRBE at the proposed 283D transmitter site is at least 90 dBu (the other "desired" signal). 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 KAMA-FM and KRBE from the proposed 283D facility is a signal of greater than or equal to 130 dBu.

The proposed antenna is to be located on the JPMorgan Chase Tower Building—a 1000-foot tall skyscraper in downtown Houston. The antenna centerline at 3 meters above the rooftop of the building is at least 12 meters above the floor level of the top floor (Floor Level 75) of the building. (The rooftop is not assessable to the general public. Note that the Observation Deck of the building is on Floor Level 60.)

Figure EE1 is the vertical plane relative field pattern for the proposed Nicom BKG-77 two-bay halfwave-spaced antenna. By adjusting for the vertical plane downward relative field values of the proposed antenna, it is herein demonstrated that the 130 dBu interfering signal (using a free space field determination) does not exist at

any point on the building that is assessable to the building tenants or to the general public. (Actually, the study is made to 2 meters above ground level to account for a person's height.)

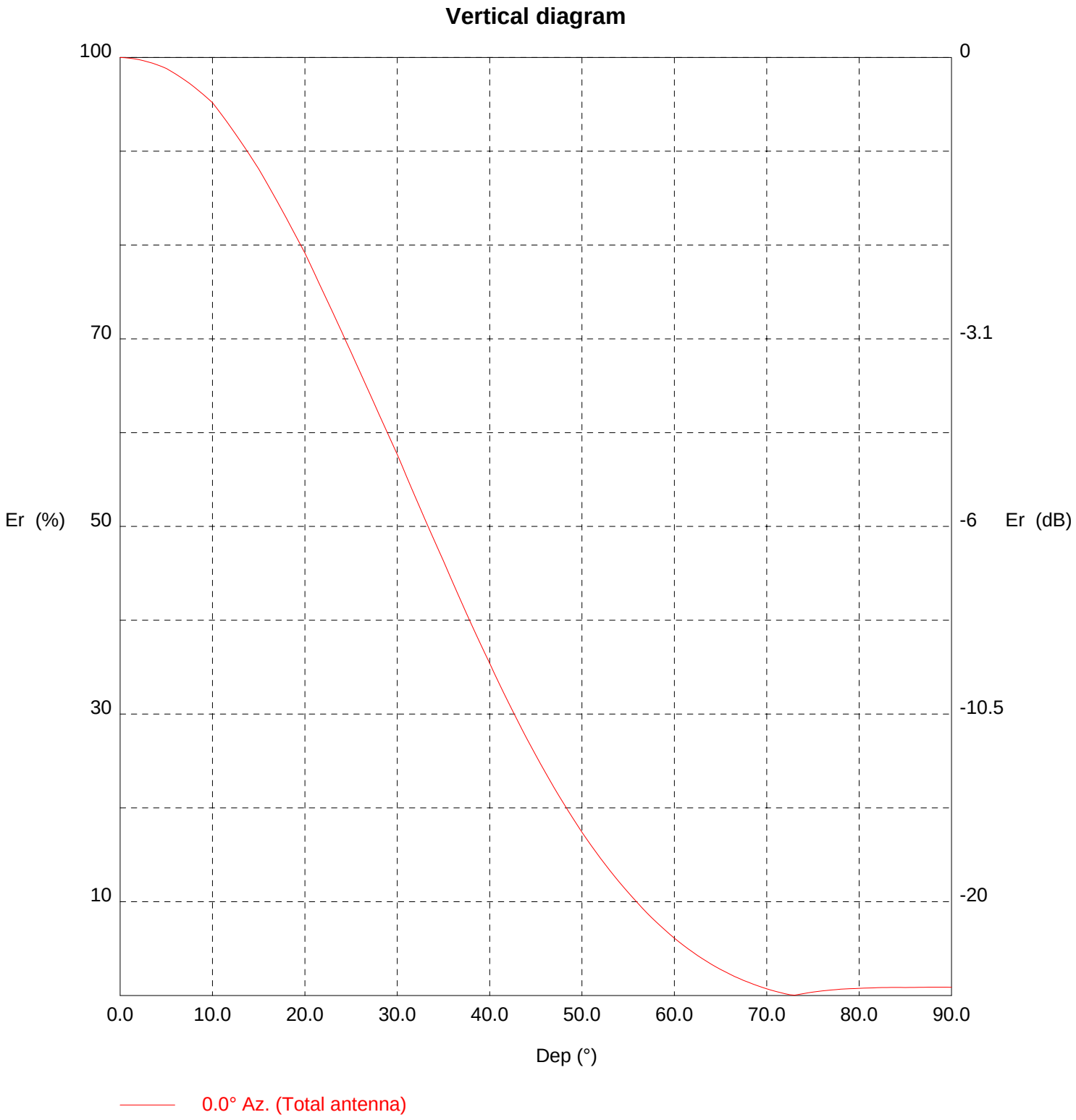
Attached as Figure EE2 is a tabulation of various points (at a horizontal plane that is 8 meters below the lower bay of the proposed antenna directly below the antenna). (Column B is the different distances from the tower base to each studied point.) The actual distance from the antenna to each point is listed in Column C, the hypotenuse of the vertical height (Column A) and the horizontal distance (Column B). Also, the vertical distance from the antenna bottom to the calculated interference signal for each studied point is provided in Column K. Because the calculated distance to the free space interfering signal (Column J) is less than the hypotenuse distance (Column C) and the interfering signal vertical distance (Column K) is less than the vertical distance (Column A) for each studied point, the interfering signal does not reach any studied point. Therefore, pursuant to Section 74.1204(d) of the FCC Rules, KAMA-FM and KRBE are adequately protected by the proposed facility.

TX station: BKG77/2 GENERIC

Site name: 1/2 WAVE SEPARATION

Frequency: 98.10 MHz

FIGURE EE1 (Page 1 of 2)



TX station: BKG77/2 GENERIC

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Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)	Dep (°)	Er (%)	ERP (W)
0.0	100.0	914.2	30.0	57.7	304.2	60.0	6.1	3.4
0.5	100.0	913.7	30.5	56.5	292.0	60.5	5.7	3.0
1.0	99.9	912.9	31.0	55.3	280.1	61.0	5.3	2.6
1.5	99.9	911.6	31.5	54.2	268.5	61.5	5.0	2.3
2.0	99.8	910.0	32.0	53.0	257.2	62.0	4.6	1.9
2.5	99.7	908.1	32.5	51.9	246.3	62.5	4.3	1.7
3.0	99.5	905.7	33.0	50.8	235.6	63.0	3.9	1.4
3.5	99.4	903.0	33.5	49.6	225.3	63.5	3.6	1.2
4.0	99.2	899.9	34.0	48.5	215.3	64.0	3.3	1.0
4.5	99.0	896.5	34.5	47.4	205.5	64.5	3.1	0.9
5.0	98.8	892.7	35.0	46.3	196.1	65.0	2.8	0.7
5.5	98.5	887.7	35.5	45.2	186.5	65.5	2.5	0.6
6.0	98.2	882.4	36.0	44.0	177.3	66.0	2.3	0.5
6.5	97.9	876.7	36.5	42.9	168.4	66.5	2.0	0.4
7.0	97.6	870.7	37.0	41.8	159.8	67.0	1.8	0.3
7.5	97.2	864.3	37.5	40.7	151.5	67.5	1.6	0.2
8.0	96.9	857.7	38.0	39.6	143.5	68.0	1.4	0.2
8.5	96.5	850.8	38.5	38.5	135.8	68.5	1.2	0.1
9.0	96.1	843.5	39.0	37.5	128.5	69.0	1.0	0.1
9.5	95.6	836.0	39.5	36.4	121.4	69.5	0.9	0.1
10.0	95.2	828.2	40.0	35.4	114.6	70.0	0.7	0.0
10.5	94.5	817.1	40.5	34.4	107.9	70.5	0.6	0.0
11.0	93.9	805.8	41.0	33.3	101.5	71.0	0.4	0.0
11.5	93.2	794.4	41.5	32.3	95.4	71.5	0.3	0.0
12.0	92.5	782.7	42.0	31.3	89.5	72.0	0.2	0.0
12.5	91.8	770.9	42.5	30.3	84.0	72.5	0.1	0.0
13.0	91.1	759.0	43.0	29.3	78.7	73.0	0.0	0.0
13.5	90.4	746.9	43.5	28.4	73.6	73.5	0.1	0.0
14.0	89.6	734.6	44.0	27.4	68.8	74.0	0.2	0.0
14.5	88.9	722.3	44.5	26.5	64.3	74.5	0.3	0.0
15.0	88.1	709.8	45.0	25.6	59.9	75.0	0.4	0.0
15.5	87.3	696.2	45.5	24.7	55.8	75.5	0.4	0.0
16.0	86.4	682.5	46.0	23.8	51.9	76.0	0.5	0.0
16.5	85.5	668.7	46.5	23.0	48.2	76.5	0.5	0.0
17.0	84.6	655.0	47.0	22.1	44.7	77.0	0.6	0.0
17.5	83.8	641.2	47.5	21.3	41.5	77.5	0.6	0.0
18.0	82.8	627.4	48.0	20.5	38.4	78.0	0.7	0.0
18.5	81.9	613.7	48.5	19.7	35.4	78.5	0.7	0.0
19.0	81.0	599.9	49.0	18.9	32.7	79.0	0.7	0.0
19.5	80.1	586.2	49.5	18.2	30.1	79.5	0.7	0.1
20.0	79.1	572.5	50.0	17.4	27.7	80.0	0.8	0.1
20.5	78.1	557.6	50.5	16.7	25.5	80.5	0.8	0.1
21.0	77.1	542.9	51.0	16.0	23.4	81.0	0.8	0.1
21.5	76.0	528.2	51.5	15.3	21.4	81.5	0.8	0.1
22.0	75.0	513.7	52.0	14.6	19.6	82.0	0.8	0.1
22.5	73.9	499.3	52.5	14.0	17.9	82.5	0.8	0.1
23.0	72.8	485.1	53.0	13.3	16.3	83.0	0.8	0.1
23.5	71.8	471.1	53.5	12.7	14.8	83.5	0.9	0.1
24.0	70.7	457.2	54.0	12.1	13.4	84.0	0.9	0.1
24.5	69.6	443.5	54.5	11.5	12.2	84.5	0.9	0.1
25.0	68.6	429.9	55.0	11.0	11.0	85.0	0.8	0.1
25.5	67.5	416.4	55.5	10.4	9.9	85.5	0.9	0.1
26.0	66.4	403.0	56.0	9.9	8.9	86.0	0.9	0.1
26.5	65.3	389.8	56.5	9.3	8.0	86.5	0.9	0.1
27.0	64.2	376.9	57.0	8.8	7.1	87.0	0.9	0.1
27.5	63.1	364.2	57.5	8.3	6.4	87.5	0.9	0.1
28.0	62.0	351.7	58.0	7.9	5.6	88.0	0.9	0.1
28.5	60.9	339.4	58.5	7.4	5.0	88.5	0.9	0.1
29.0	59.8	327.4	59.0	7.0	4.4	89.0	0.9	0.1
29.5	58.8	315.7	59.5	6.5	3.9	89.5	0.9	0.1

FIGURE EE2
FREE SPACE FIELD STRENGTH AT A DISTANCE STUDY RESULTS

PROJECT: HOUSTON, TX, CHANNEL 283D

4-Jun-15

Pt	Column A Vert Dist From Ant Bottom (meters)	Column B Horiz Dist From Tower Base (meters)	Column C Hypot-enuse Dist fr Ant Bottom (meters)	Column D Down-ward Angle fr Ant Bottom (degrees)	Column E Max ERP (watts)	Column F Max ERP (dBmw)	Column G Pattern Relative Field at Down-ward Angle	Column H Free Space Inter-ferring Signal (dBu)	Column I Adjusted ERP in Down-ward Angle (dBmW)	Column J Interf Distance along Hypot-enuse (meters)	Column K **Vert Interf Distance below Antenna (meters)**
1	8	0.1	**8.0**	89.3	99	49.96	0.001	130.0	-10.04	0.0	0.0
2	8	2	**8.2**	76.0	99	49.96	0.005	130.0	3.94	0.1	0.1
3	8	4	**8.9**	63.4	99	49.96	0.039	130.0	21.78	0.9	0.8
4	8	6	**10.0**	53.1	99	49.96	0.133	130.0	32.43	2.9	2.4
5	8	8	**11.3**	45.0	99	49.96	0.256	130.0	38.12	5.7	4.0
6	8	10	**12.8**	38.7	99	49.96	0.385	130.0	41.67	8.5	5.3
7	8	12	**14.4**	33.7	99	49.96	0.496	130.0	43.87	11.0	6.1
8	8	14	**16.1**	29.7	99	49.96	0.588	130.0	45.34	13.0	6.5
9	8	16	**17.9**	26.6	99	49.96	0.653	130.0	46.25	14.5	6.5
10	8	18	**19.7**	24.0	99	49.96	0.707	130.0	46.94	15.7	6.4
11	8	20	**21.5**	21.8	99	49.96	0.760	130.0	47.57	16.8	6.3
12	8	25	**26.2**	17.7	99	49.96	0.838	130.0	48.42	18.6	5.7
13	8	30	**31.0**	14.9	99	49.96	0.889	130.0	48.93	19.7	5.1
14	8	35	**35.9**	12.9	99	49.96	0.918	130.0	49.21	20.3	4.5
15	8	40	**40.8**	11.3	99	49.96	0.939	130.0	49.41	20.8	4.1

NOTE: Study point at 2 meters above ground (or rooftop, see write-up) level.
Worst-case relative field of 1.000 used for last examined point.

RESULTS: COLUMN J DISTANCES ARE LESS THAN COLUMN C AND COLUMN K DISTANCES ARE LESS THAN COLUMN A DISTANCES IN ALL INSTANCES; THEREFORE, INTERFERRING SIGNAL DOES NOT EXIST AT ANY LOCATION (TWO METERS OR LESS ABOVE GROUND LEVEL)

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