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ENGINEERING REPORT

Aransas Pass, TX, Channel 227D FM Translator Application

ENGINEERING STATEMENT

Gerald Benavides ("Applicant") submits this Long-form Application that covers its pending Auction 83 Short-form Application for a new FM translator station at Aransas Pass, TX. The pending Short-form Application file number is BNPFT-20030317AFH.

The Tech Box parameters are changed slightly by the Long-form filing and the changes are deemed minor pursuant to Section 74.1233(a) of the FCC Rules.

LPFM Preclusion Study Results for the herein proposed facility are provided in the separate Exhibit 1 (Section 1, Question 5 of the FCC Form 349, as directed by the FCC).

CHANNEL STUDY

Attached as Figure EE1 is a channel study for the proposed channel 227D facility. All required protections are met by contour non-overlap pursuant to Section 74.1204, with the exception of protection to KMXR, Corpus Christi, TX, 230C1. KMXR is protected, as discussed below.

CONTOUR OVERLAP SHOWING

No detailed study is required due to contour non-overlap clearance as listed in Figure EE1 for each protected facility (with the exception of KMXR, discussed below). The service and interference contour distances that are listed on Figure EE1 use the worst-case (greatest) distance along any bearing for each facility, and also considers each protected station as omni-directional. No contour overlap using this worst-case test means no possible contour overlap when applying Section 73.313 methodology.

PROTECTION TO KMXR

KMXR, Corpus Christi, TX, 230C1, is third adjacent-channel to the proposed channel 227D facility and is located 59.6 kilometers (at 245 degrees True bearing) from the proposed 227D transmitter site. The 60 dBu F50,50 service contour extends beyond the 227D transmitter site. Using the well-established *Living Way Ministries* Methodology, no actual interference to any population is predicted to exist to KMXR.

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 this station.

The F50,50 signal strength from KMXR at the proposed 227D transmitter site is 65.3 dBu (the “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 KMXR from the proposed 227D facility is a signal of greater than or equal to 105.3 dBu.

Figure EE2 is the vertical plane relative field pattern for the proposed antenna. By adjusting for the vertical plane downward relative field values of the proposed antenna, it is herein demonstrated that the 105.3 dBu interfering signal (using a free space field determination) does not exist at any point a ground level. (Actually, the study is made to 2 meters above ground level to account for a person’s height.)

Attached as Figure EE3 is a tabulation of various points (at 2 meters above ground level) from the proposed translator tower base. (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). Because the calculated distance to the free space interfering signal (Column J) is less than the hypotenuse distance (Column C) for each studied point, the interfering signal does not reach any studied point. (In other words, the interfering signal does not make it to 2 meters above ground level to any point.) Therefore, pursuant to Section 74.1204(d) of the FCC Rules, KMXR is adequately protected by the proposed facility.

The above study results of Figure EE3 assume uniform terrain elevation near the proposed tower. Because the clearance shown (Column C minus Column J values) is

at least 20 meters for all rows, this assumption is acceptable for showing non-interference—no actual elevation within 320 meters of the proposed translator tower is at an elevation that is more than 5 meters above that of the tower base elevation.

AERIAL PHOTO

Figure EE4, attached, is an aerial photo of the proposed transmitter site. All nearby buildings shown on the photo are less than 10 meters in height; therefore, based on the clearance shown by Figure EE3, no interference is predicted to occur to KMXR.

MEXICAN PROTECTION

The proposed site is located more than 150 kilometers from the nearest point on the US-Mexican Border; therefore, no ERP restrictions are required of the proposed US FM translator facility.

SECTION 74.1204 CHANNEL STUDY**PROJECT: ARANSAS PASS, TX, 227D FROM PROPOSED SITE****STUDY COORDINATES: N 27-58-50.0; W 97-05-24.0 (N D-M-S; W D-M-S)**

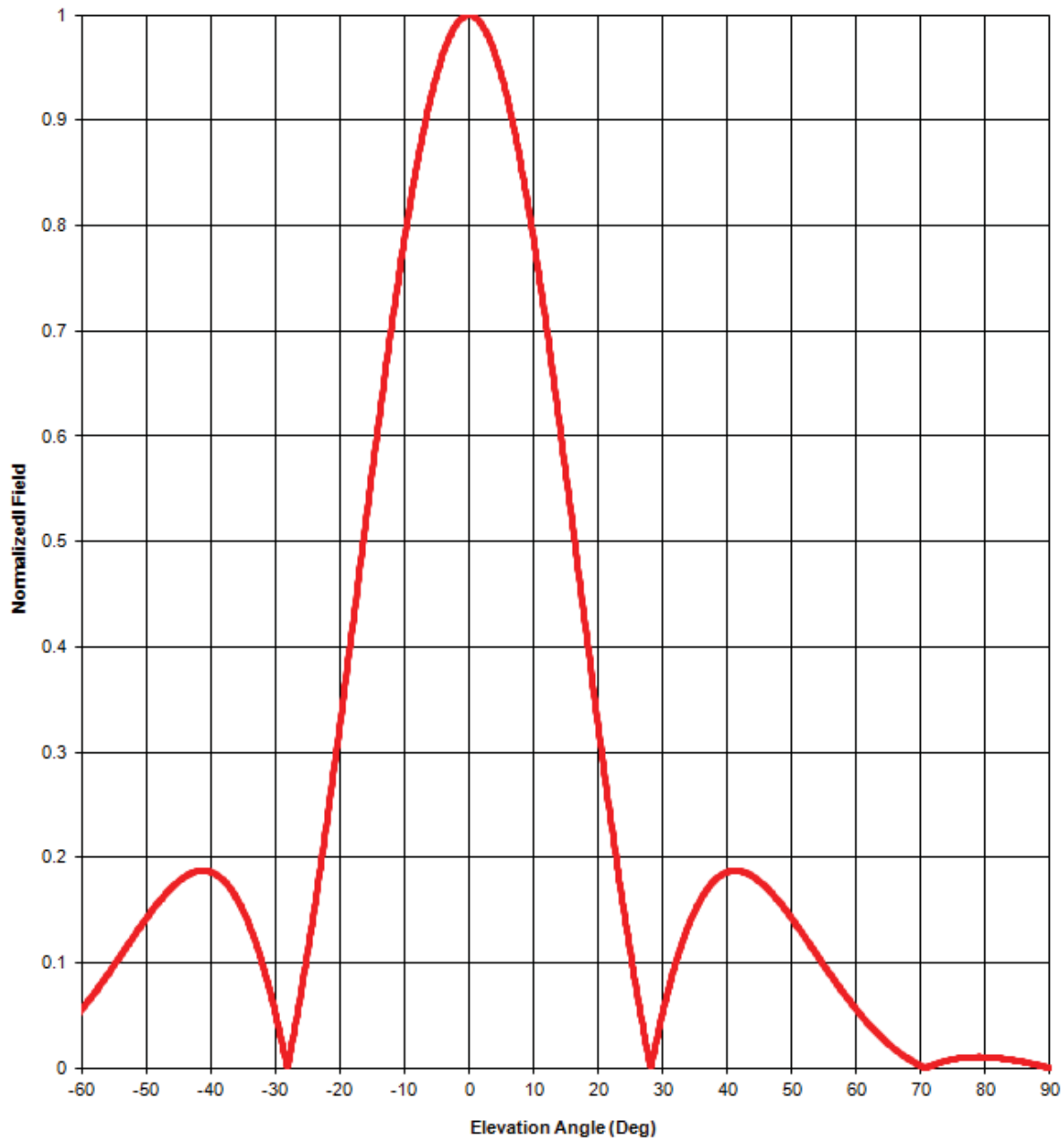
Call Docket	Channel FacilityID	Class Service	Frequency ERP	Status DA?	City HAAT	State RCAMSL	Country RCAGL	File Number
Latitude	Longitude		ASRN		Dist (km)		Dist (mi)	Azimuth
Licensee/Permittee								

KKBA	224	C2 FM	92.7 MHz	LIC	KINGSVILLE	TX	US	BLH-20130401AKD
-	34918		13. kW		250.7 m	260.3 m	245.4 m	
N 27 39	33.00	W	97 34	12.00	1053367	59.20 km	36.79 mi	232.98°
MALKAN INTERACTIVE COMMUNICATIONS, L.L.C.								
Protected Contour Dist: 49.2 km Prop 227D Interf Contour Dist: <1.0 km								
Result: 9.0 km CLEAR (WORST-CAST STUDY)								
KITE	227	C1 FM	93.3 MHz	LIC	PORT LAVACA	TX	US	BLH-19920518KB
-	12179		100. kW		97. m	107. m	93. m	
N 28 42	22.00	W	96 48	3.00	-	85.26 km	52.98 mi	19.26°
VICTORIA RADIOWORKS, LLC								
Protected Contour Dist: 51.1 km Prop 227D Interf Contour Dist: 24.3 km								
Result: 9.9 km CLEAR (WORST-CAST STUDY)								
NEW	227	D	FX	93.3 MHz	APP	ARANSAS PASS	TX	US
-	147326		0.05 kW		0. m	62. m	60. m	
N 27 58	51.00	W	97 7	56.00	1057456	4.15 km	2.58 mi	270.44°
GERALD BENAVIDES								
NOTE: THIS IS THE AUCTION 83 SHORT-FORM APPLICATION THAT IS BEING COVERED BY THIS LONG-FORM APPLICATION								
K228XM	228	D	FX	93.5 MHz	LIC	CORPUS CHRISTI	TX	US
-	141432		0.25 kW		77.2 m	84. m	72. m	
N 27 45	9.00	W	97 27	17.93	1045028	43.94 km	27.30 mi	234.83°
LISA LOPEZ								
Protected Contour Dist: 11.6 km Prop 227D Interf Contour Dist: 10.4 km								
Result: 21.9 km CLEAR (WORST-CAST STUDY)								
KMXR	230	C1 FM	93.9 MHz	LIC	CORPUS CHRISTI	TX	US	BLH-20020220AAG
-	55163		100. kW		284. m	302. m	281. m	
N 27 45	7.00	W	97 38	17.00	1051768	59.62 km	37.05 mi	244.87°
CAPSTAR TX LLC								
NOTE: A SHOWING BASED ON THE LIVING WAY MINISTRIES METHODOLOGY TO THIS STATION IS INCLUDED WITH THIS APPLICATION THAT DEMONSTRATES PROTECTION TO THIS FACILITY.								

Study Complete

Elevation pattern

FIGURE EE2 (Page 1 of 2)



Antenna model: 6812b, 5-bay half-wave-spaced

Test frequency: 98.1 MHz

Gain (maximum):

Power	dB
1.40	1.45 dB

Document No. 6812b 5-bay hw (130701)

A Division of Howell Laboratories, Inc., P. O. Box 389, Bridgton, Maine 04009 USA

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FIGURE EE2 (Page 2 of 2)

Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field	Degrees	Rel. Field
1	0.998	19	0.373	37	0.171	55	0.097	73	0.005
2	0.991	20	0.326	38	0.178	56	0.089	74	0.007
3	0.979	21	0.279	39	0.183	57	0.080	75	0.008
4	0.964	22	0.234	40	0.186	58	0.071	76	0.009
5	0.943	23	0.191	41	0.187	59	0.063	77	0.010
6	0.919	24	0.149	42	0.187	60	0.056	78	0.010
7	0.891	25	0.110	43	0.185	61	0.048	79	0.011
8	0.860	26	0.072	44	0.182	62	0.041	80	0.010
9	0.825	27	0.037	45	0.177	63	0.035	81	0.010
10	0.787	28	0.005	46	0.172	64	0.029	82	0.010
11	0.747	29	0.025	47	0.165	65	0.023	83	0.009
12	0.704	30	0.053	48	0.158	66	0.018	84	0.008
13	0.659	31	0.077	49	0.150	67	0.013	85	0.007
14	0.613	32	0.099	50	0.142	68	0.009	86	0.006
15	0.566	33	0.119	51	0.133	69	0.005	87	0.004
16	0.518	34	0.135	52	0.125	70	0.002	88	0.003
17	0.470	35	0.150	53	0.116	71	0.001	89	0.002
18	0.421	36	0.161	54	0.106	72	0.003	90	0.000

Elevation Pattern Tabulation

Antenna 6812b, 5-bay half-wave-spaced

Relative Field at 0° Depression = 1.000

FIGURE EE3

FREE SPACE FIELD STRENGTH AT A DISTANCE STUDY TO KMXR

PROJECT: ARSANSAS, TX, CHANNEL 227D

15-Aug-13

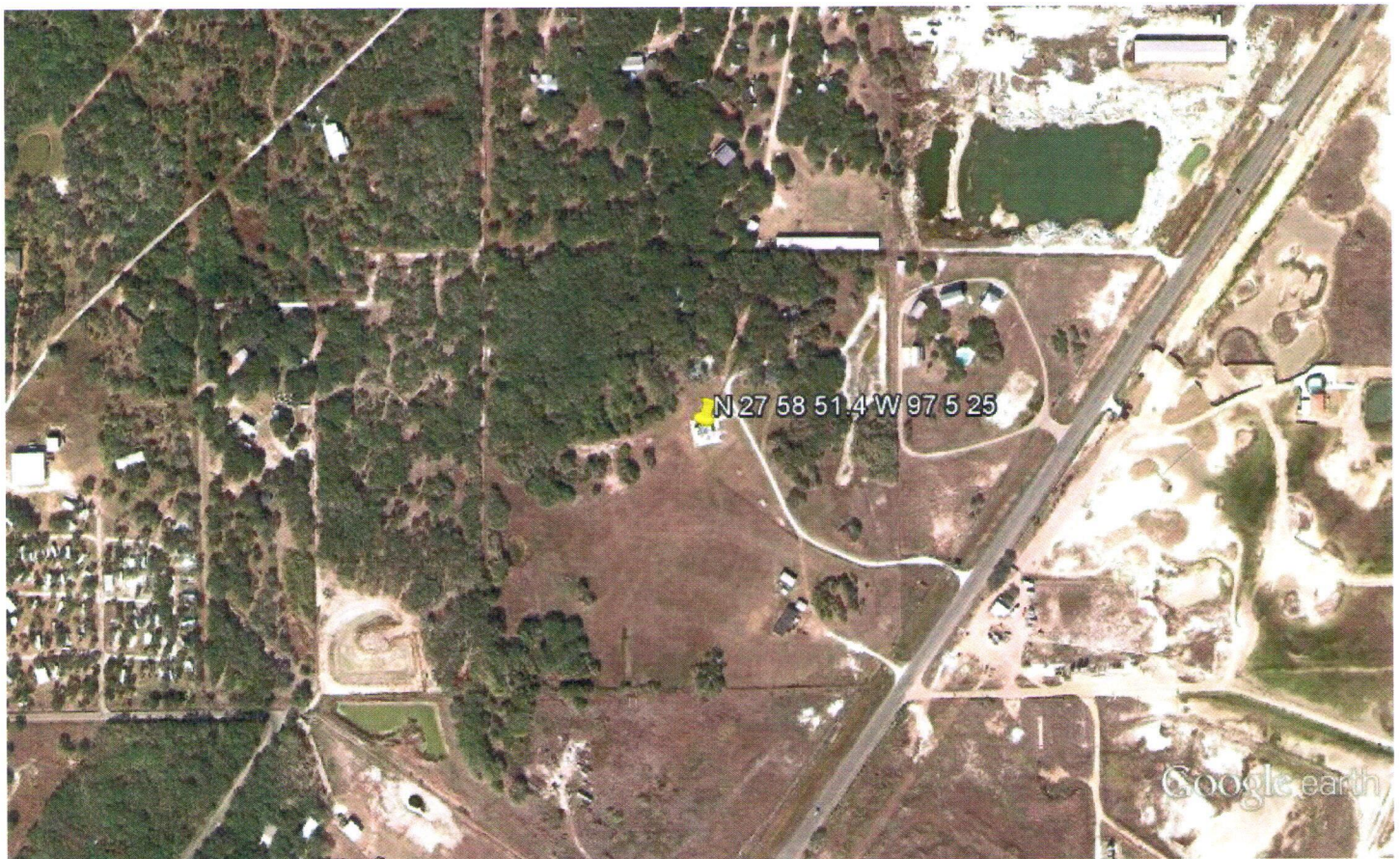
	Column A	Column B	Column C	Column D	Column E	Column F	Column G	Column H	Column I	Column J
	Vertical	Horizontal	Hypotenuse	Downward			Pattern	Free	Adjusted	
	Distance	Distance	Distance	Angle			Relative	Space	ERP in	
	From	From	From	From	Max	Max	Field at	Inter-	Down-	
	Antenna	Tower	Antenna	Antenna	ERP	ERP	Down-	ferring	ward	OUTPUT
	Bottom	Base	Bottom	Bottom			ward	Signal	Angle	Distance
Point	(meters)	(meters)	(meters)	(degrees)	(watts)	(dBmW)	Angle	(dBu)	(dBmW)	(meters)
1	55	0.1	55.0	89.9	65	48.13	0.002	105.3	-5.85	0.6
2	55	10	55.9	79.7	65	48.13	0.011	105.3	8.96	3.4
3	55	20	58.5	70.0	65	48.13	0.002	105.3	-5.85	0.6
4	55	30	62.6	61.4	65	48.13	0.048	105.3	21.75	14.8
5	55	40	68.0	54.0	65	48.13	0.106	105.3	28.64	32.7
6	55	50	74.3	47.7	65	48.13	0.165	105.3	32.48	50.9
7	55	70	89.0	38.2	65	48.13	0.183	105.3	33.38	56.4
8	55	90	105.5	31.4	65	48.13	0.099	105.3	28.04	30.5
9	55	110	123.0	26.6	65	48.13	0.072	105.3	25.28	22.2
10	55	130	141.2	22.9	65	48.13	0.234	105.3	35.51	72.1
11	55	170	178.7	17.9	65	48.13	0.470	105.3	41.57	144.9
12	55	210	217.1	14.7	65	48.13	0.613	105.3	43.88	189.0
13	55	250	256.0	12.4	65	48.13	0.704	105.3	45.08	217.0
14	55	300	305.0	10.4	65	48.13	0.787	105.3	46.05	242.6
15	55	350	354.3	8.9	65	48.13	0.860	105.3	46.82	265.1
16	55	400	403.8	7.8	65	48.13	1.000	105.3	48.13	308.3

NOTE: Study point at 2 meters above ground level.

Worst-case relative field of 1.000 used for last examined point.

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

FIGURE EE4: AERIAL PHOTO OF PROPOSED TRANSMITTER SITE
ARANSAS PASS, TX, 227D



Google earth

feet 1000
meters 500

