

Minor Modification of K277AG Facility ID No. 51844

This exhibit is for minor modification of translator permit for K277AG Facility ID No. 51844. It specifies a change in location, antenna elevation, and antenna model only.

Antenna Location

The proposed antenna is to be mounted on an existing tower identified by registration number 1033983 at **72.2** meters above ground. Below as **Figure 1** is an overlap and spacing study from which it can be determined that this proposal is within the protected contour of **second** adjacent channel station KHJK(FM).

73.1204 Compliance

We will demonstrate that a lack of population and/or other factors allow this proposal to be compliant with 74.1204. The process commonly called "Living Way", allows for the use of D/U Analysis, also known as "signal strength ratio methodology" to be utilized to demonstrate compliance. In this instant case the facility to be protected is on a second or third adjacent channel and is to be afforded protection from signals 40 dB stronger than the protected facility presents near the proposed translator antenna location.

Concerning KHJK(FM) In **Figure 2** a map showing the predicted 81.9 dBu signal contour of the protected facility at the proposed translator antenna location is given. This proposal can only cause predicted interference to the protected facility by having a signal exceeding 121.9 dBu ($81.9 + 40$) in a habitable/populated area. Utilizing the line of sight equation shown in **Figure 3** which considers the vertical elevation pattern of the proposed antenna, it has been determined that a 121.9 dBu signal developed by 99 watts, as proposed, emitted by the proposed antenna mounted 72.2 meters above ground, will not reach habitable areas or ground level. With examination of the image in **Figure 4** it can be determined that no habitable space extends above this height within the confines of this contour. Thus the provisions of the rules section concerning prohibited overlap will not apply as it has been demonstrated that no actual interference will occur due to a lack of population and other factors as applied in this instant proposal.

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Fill-in and Minor Change Status

This proposal is to serve as a fill-in translator for station KKMY(FM) Facility ID 62239, Orange, TX. The map of **Figure 5** demonstrates that the proposed 60 dBu contour is contained within that of the

KKMY(FM) facility. It can also be seen that the proposed and permitted facilities have service contour overlap.

RF Fields Statement

The proposed facilities were evaluated in terms of potential radio frequency fields exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radio frequency Radiation."

The proposed antenna system is a **Bext TFC2K**, a one (1) element antenna, mounted 72.2 meters above ground. As this element type is not modeled in any current RF Fields calculation computer program, for purposes of this analysis the FM Model RF Fields program has been set to calculate values for an array of "worst case" type of antenna element(s) "Ring Stub", operated with an effective radiated power of 0.099 Kilowatts in the Horizontal and Vertical plane. At 2 meters above the surface, at 18 meters from the base of the tower, this proposal will contribute worst case, 0.9 microwatts per square centimeter, or 0.09 percent of the allowable ANSI limit for controlled exposure, and 0.5 percent of the allowable limit for uncontrolled exposure. This figure is less than 5.0% of the applicable FCC exposure limit at all locations extending out from the base of the tower. Section 1.1307(b)(3) excludes applications when the calculated level is predicted to be less than 5.0% of the applicable exposure limit. It is therefore believed that this proposal is in compliance with OET Bulletin Number 65 as required by the Federal Communications Commission.

Further, the applicant will see that signs are posted in the vicinity of the tower, warning of potential radio frequency hazards at the site. The site itself is restricted from public access. The applicant will cooperate with other users of the tower to reduce power of the facility, or discontinue operation, as necessary to limit human exposure to levels less than specified by the Federal Communications Commission should anyone be required to climb the tower for maintenance or inspection.

Figure 1. Overlap and Spacing Study

ASR 1033983 at 72.2 m 237 ft AGL
Capstar TX, LLC

REFERENCE CH# 277D - 103.3 MHz, Pwr= 0.099 kw, HAAT= 73.9 M, COR= 77.1 M DISPLAY DATES
30 04 32.10 N. Average Protected F(50-50)= 8.86 km DATA 01-19-21
94 07 48.70 W. Omni-directional SEARCH 01-26-21

CH CITY	CALL	TYPE ANT STATE	AZI <-<	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	=IN* (Overlap in km)	=OUT*
277C2	K8IU	LIC_ZCN LA	75.9 256.3	77.84 BLH20190612AAS	30 14 36.70 93 20 38.60	50.000 115	133.5	47.9 Cumulus Licensing LLC	-64.7*	0.0
279C	KHJK	LIC_CN TX	247.2 67.0	39.81 BLED20130415ACC	29 56 09.80 94 30 39.70	100.000 590	13.7 607	91.8 Educational Media Foundati	17.4	-52.7*
277D	K277AG	LIC_CN TX	353.8 173.8	2.19 BLFT20050215AAA	30 05 42.70 94 07 57.60	0.090 51	25.0 57	7.5 Capstar TX, LLC	-31.7*	-34.7*
277C	K30J-FM	CP_CN TX	228.1 47.3	202.33 BPH20171221AAD	28 51 04.90 95 40 36.80	100.000 596	197.5 596	91.7 Estrella Radio License Of	-3.9	81.9
277C	K30J-FM	LIC_CN TX	225.8 45.1	199.71 BLH19871013KC	28 48 57.90 95 36 03.80	100.000 303	172.3 303	72.6 Estrella Radio License Of	18.7	98.4
277C2	AL7463	RSV-A TX	336.7 156.3	164.61 RM10035	31 25 59.66 94 49 03.75	50.000 150	135.7 227	50.2 20.2	20.2	85.7
277C2	KJCS	LIC_CN TX	336.7 156.3	164.61 BLH20020228AAD	31 25 59.70 94 49 03.80	22.500 224	127.8 304	51.2 Radio Licensing, Inc.	28.2	84.7
277L1	KZCV-LP	LIC_CN TX	248.9 68.5	78.69 BLL20170623ABQ	29 49 06.80 94 53 28.70	0.020 65	74	50.8 Iglesia Cristo Viene Of Ba	50.8	44.1
275C0	KLTN	LIC_CN TX	253.4 72.8	121.72 BLH20090715AIH	29 45 26.80 95 20 19.80	100.000 300	10.2 312	72.7 univision Radio Stations G	102.8	48.3
274C2	KTXJ-FM	LIC_ZCN TX	8.3 188.4	110.64 BLH20100910AEJ	31 03 36.70 93 57 42.70	46.000 156	4.7 247	44.5 Crosstexas Media, Inc.	97.0	65.5
277D	K277DE	LIC_DCN TX	266.3 85.6	129.43 BLFT20170517ABA	29 59 34.80 95 28 17.80	0.250 190	50.0 190	15.3 Salem Communications Holdi	70.8	84.9
275C	KAJN-FM	LIC_CN LA	90.9 271.8	169.33 BLH19800324AD	30 02 19.70 92 22 15.40	100.000 457	12.2 459	84.1 Agape Broadcasters, Inc.	148.1	84.6
276C3	KWLA	LIC_CN LA	25.3 205.6	155.10 BLH20140905ABA	31 20 07.10 93 25 58.60	25.000 100	58.0 187	37.1 Baldrige-Dumas Communicat	88.2	103.3

Terrain database is NDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM. In & out distances between contours are shown at closest points. Reference zone= west Zone, Co to 3rd adjacent. All separation margins (if shown) include rounding. Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X) "a" affixed to 'IN' or 'OUT' values = site inside restricted contour.

Figure 2. Contour Map

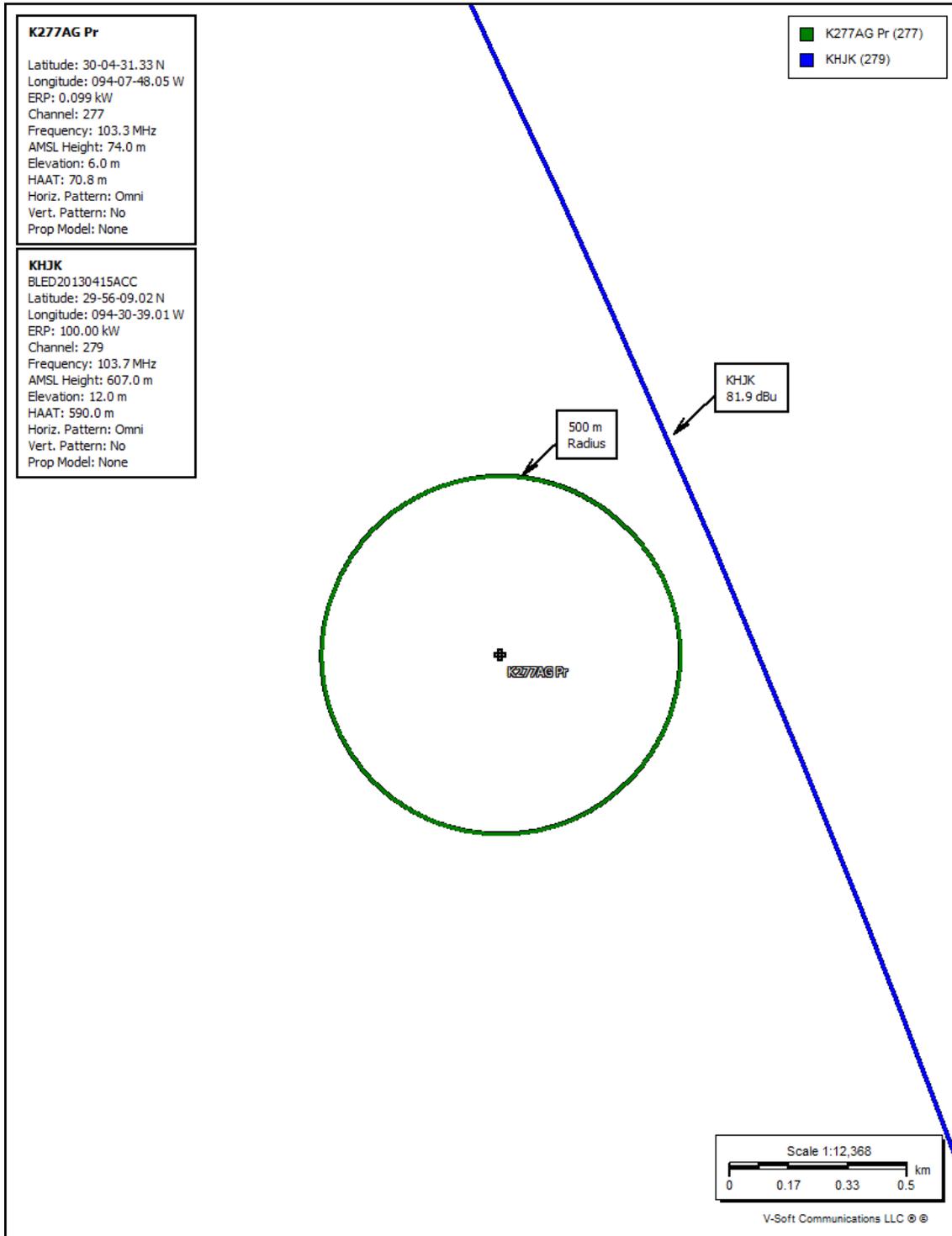


Figure 3. Signal Level at or Near Ground Level

Proposed Antenna:	BEX TFC2K-D 1Bay	
Proposed Power:	0.099	kW
Antenna Height AGL:	72.2	meters
Interference Contour:	121.9	dBu
Artificial Rcv Antenna Height:	2	meters
Distance (Free Space) Equation:	$= (10^{((106.92 - [\text{desired dBu}] + [\text{ERP in dBk}]) / 20)}) * 1000$	
Field Strength (dBu) Equation	$= 106.92 - (20 * (\text{LOG}_{10}[\text{DistMeters} / 1000])) + [\text{ERP in dBk}]$	

Fill in "yellow" cells

Depression				Distance				
Angle	Antenna			from Ant.	Distance	Field Strength	Distance	Field Strength
Below	Relative	ERP	ERP	to Interf	from Ant. to	in dBu @	from Ant.	in dBu @
Horizon	Field	in kW	in dBk	Contour	Artificial Plane	Artificial Plane	to Ground Level	Ground Level
0°	0.952	0.090	-10.47	53.39 m	infinite	---	infinite	---
-5°	1.000	0.099	-10.04	56.08 m	805.45 m	98.76 dBu	828.40 m	98.51 dBu
-10°	0.975	0.094	-10.26	54.68 m	404.27 m	104.52 dBu	415.78 m	104.28 dBu
-15°	0.897	0.080	-10.99	50.30 m	271.23 m	107.27 dBu	278.96 m	107.02 dBu
-20°	0.824	0.067	-11.73	46.21 m	205.25 m	108.95 dBu	211.10 m	108.71 dBu
-25°	0.802	0.064	-11.96	44.98 m	166.11 m	110.55 dBu	170.84 m	110.31 dBu
-30°	0.841	0.070	-11.55	47.16 m	140.40 m	112.42 dBu	144.40 m	112.18 dBu
-35°	0.908	0.082	-10.88	50.92 m	122.39 m	114.28 dBu	125.88 m	114.04 dBu
-40°	0.949	0.089	-10.50	53.22 m	109.21 m	115.66 dBu	112.32 m	115.41 dBu
-45°	0.932	0.086	-10.66	52.27 m	99.28 m	116.33 dBu	102.11 m	116.08 dBu
-50°	0.847	0.071	-11.49	47.50 m	91.64 m	116.19 dBu	94.25 m	115.95 dBu
-55°	0.713	0.050	-12.98	39.99 m	85.70 m	115.28 dBu	88.14 m	115.03 dBu
-60°	0.566	0.032	-14.99	31.74 m	81.06 m	113.76 dBu	83.37 m	113.51 dBu
-65°	0.421	0.018	-17.56	23.61 m	77.46 m	111.58 dBu	79.66 m	111.34 dBu
-70°	0.310	0.010	-20.22	17.39 m	74.71 m	109.24 dBu	76.83 m	108.99 dBu
-75°	0.234	0.005	-22.66	13.12 m	72.68 m	107.03 dBu	74.75 m	106.79 dBu
-80°	0.205	0.004	-23.81	11.50 m	71.28 m	106.05 dBu	73.31 m	105.81 dBu
-85°	0.210	0.004	-23.60	11.78 m	70.47 m	106.36 dBu	72.48 m	106.12 dBu
-90°	0.225	0.005	-23.00	12.62 m	70.20 m	106.99 dBu	72.20 m	106.75 dBu

Figure 4. Image of Proposed Support Tower



Figure 5. Fill-in and Minor Change Contour Map

