

TECHNICAL SUMMARY  
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT  
FM TRANSLATOR STATION K241DA  
CDBS FILE NO. BPFT-20190711AAJ  
AUSTIN, TEXAS  
CHANNEL 242 (96.3 MHZ) 0.25 KW (DA)

1. Application Purpose: It is proposed to modify the K241DA construction permit (CDBS File No. BPFT-20190711AAJ), which authorized a change in channel from 241 (96.1 MHz) to channel 242 (96.3 MHz) and modification of facilities from its current site. Specifically, this modification application proposes to relocate K241DA to an existing tower (ASRN 1013180) and modify facilities on authorized channel 242.

2. Fill-in Translator Coverage & Minor Change Compliance: The proposal will be a fill-in translator for AM station KTSN on 1490 kHz at Austin, Texas (Facility ID 41211). Figure 1 is a map demonstrating that the proposed 60 dBu contour is within a 25 mile circle from the KTSN transmitter site as required for fill-in compliance. In addition, the proposal will comply with the FCC's minor change rules as the proposed 60 dBu contour overlaps the licensed 60 dBu contour as depicted on Figure 1.

3. Section 74.1204 compliance: Figure 2 is an allocation study for channel 242 based on Section 74.1204. Figure 2 lists the results of a numerical analysis of the potential for contour overlap to all nearby co-channel, first, second and third-adjacent channel facilities as well as IF related stations. For the purposes of the numerical study, the maximum HAAT (427 meters) and ERP (0.25 kW) values were used in determining the maximum distance in any direction to the predicted coverage and interfering contours. Figure 3 demonstrates that the proposal complies with the contour overlap provisions of Section 73.1204 of the FCC rules, except with respect to stations K240EL and KHFI-FM discussed below.

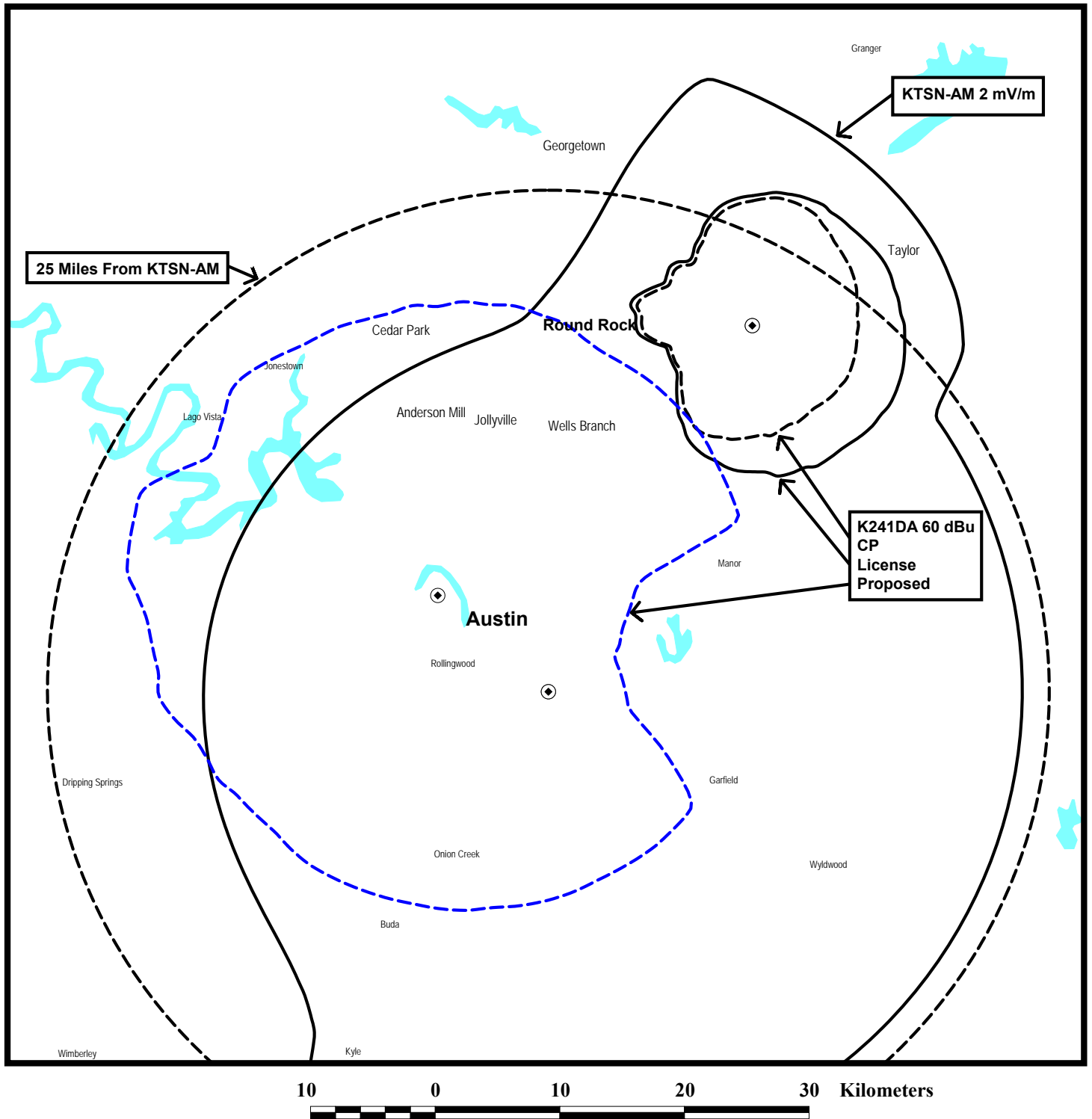
Specifically, the proposal does not comply with the contour overlap provisions of Section 73.1204 of the FCC rules with respect to second lower adjacent channel station K240EL (Ch. 240/95.9 MHz, Austin, Texas) and second upper adjacent channel station KHFI-FM (Ch. 244C1/96.7 MHz, Georgetown, Texas). However, based on the undesired-to-desired (U/D) signal strength interference ratio methodology, which is permitted by the FCC (per Living Way Ministries, Inc., 17 FCC Rcd 17054, 17056, 2002), it has been determined that no actual interference would occur due to lack of population under Section 74.1204(d). Specifically, K241DA, operating with a directional antenna (DA) maximum ERP of 0.25 kW, will be co-located with K240EL which operates with a DA maximum ERP of 0.099 kW. Furthermore, the maximum ERP for the proposed K241DA DA pattern is 250 Watts (23.98 dBW) whereas the DA pattern minimum for the K240EL DA is 33 Watts (15.18 dBW). Therefore, the maximum difference in ERP between the proposed K241DA DA and the K240EL DA would only be 8.8 dB, which is significantly less than the 40 dB U/D ratio

contained in Section 74.1204 of the FCC's rules. Therefore, it is apparent that there would be no location where the proposed K241DA operation would cause predicted interference to K240EL. In addition, the calculated KHFI-FM f(50,50) field strength at the proposed site is 143 dBu. Using the 40 dB U/D ratio contained in Section 74.1204 of the FCC rules, the proposed f(50,10) interfering signal is 183 dBu. The proposed antenna will be located 331 meters (1086 feet) above ground level on the tower. Assuming free-space propagation and a vertical plane relative field of 1.0 (worst case assumption), the interfering 183 dBu signal will extend only 0.1 meter from the transmitting antenna. Thus, the proposed K241DA0 interfering signal to KHFI-FM will not reach ground level and, therefore, will contain no population. Therefore, the proposal complies with the lack of population criteria under Section 74.1204(d).

4. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed Jampro JLLP-3, 3-bay 1-wavelength antenna will be located 331 meters above ground level. The total ERP is 0.5 kW (horizontal and vertical polarization). Presuming a worst-case vertical plane relative field of 1.0 and an antenna height of 331 meters above ground level, the maximum power density at 2 meters above ground level at the base of the tower will be  $0.154 \text{ uw/cm}^2$  which is only 0.08% of the FCC's recommended limit of  $200 \text{ uw/cm}^2$  for FM frequencies for an uncontrolled environment. Therefore, it is believed that the proposed operation is in full compliance with the FCC's requirements with regard to RFR exposure.

The transmitting site will be appropriately fenced and marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

Figure 1



### **AM FILL-IN COMPLIANCE MAP**

FM TRANSLATOR STATION K241DA  
AUSTIN, TEXAS  
CH 242 (96.3 MHZ) 0.25 KW (DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

# FM Contour Study LMS

du Treil, Lundin, &amp; Rackley, Inc., Sarasota, Florida



**Channel:** 242 **Coordinates:** 030-19-23.8 097-47-59.5 (NAD 83) **ERP:** 0.25 kW **Max. HAAT:** 427 m **Considering Only Interference Caused**

**Comment:** Proposed K241DA

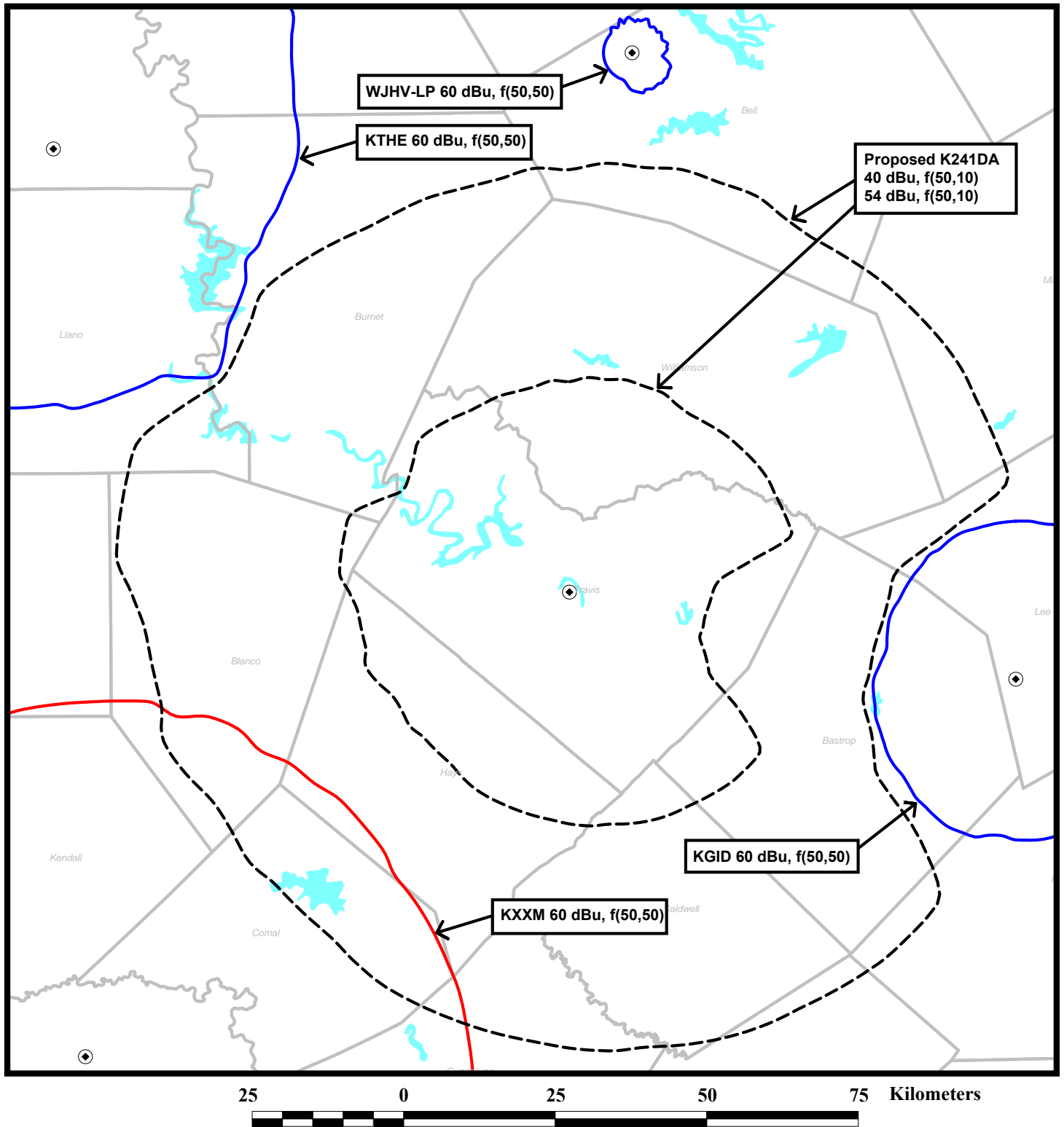
Callsign	Chan.	Service	Status	Freq.	City	State	Co.	Rec.	Latitude	Dist. (km)	Sep. (km)	Spac. (km)
Facility ID	ARN			Class	DA	73.215	ERP (kW)	HAAT (m)	Longitude	Bear. (deg)	Comment	
<b>K240EL</b>	240	FX	L2C	95.9	AUSTIN	TX	US	C	30-19-23.7	0.01	25.89	-25.88
156299	BLANK	BLFT-20170324A	D	DRI			0.099		097-47-59	103.05	<b>SHORT</b>	/1
K240EL 60.0 dBu desired distance: 24.8 km						Proposed 100.0 dBu undesired distance: 1.1 km						
<b>K241DA</b>	241	FX	L2C	96.1	AUSTIN	TX	US	C	30-31-04.7	33.25	62.46	-29.21
201312	BLANK	BLFT-20180706A	D	NDI			0.25		097-32-12	49.31	<b>SHORT</b>	/2
K241DA 60.0 dBu desired distance: 21.2 km						Proposed 54.0 dBu undesired distance: 41.2 km						
<b>KXXM</b>	241	FM	L2C	96.1	SAN ANTONIO	TX	US	C	29-38-01.8	110.86	103.34	7.52
28668	BLANK	BLH-20100510A	C1	NDI			100	182	098-37-55.1	226.48	<b>CLOSE</b>	
KXXM 60.0 dBu desired distance: 62.1 km						Proposed 54.0 dBu undesired distance: 41.2 km						
<b>K241DA</b>	242	FX	MOD	96.3	AUSTIN	TX	US	C	30-31-04.7	33.25	100.35	-67.1
201312	BLANK	BPFT-20190711A	D	DRI			0.215		097-32-12	49.31	<b>SHORT</b>	/2
K241DA 60.0 dBu desired distance: 20.5 km						Proposed 40.0 dBu undesired distance: 79.9 km						
<b>KGID</b>	242	FM	L2C	96.3	GIDDINGS	TX	US	C	30-11-38.9	75.27	105.86	-30.59
190454	BLANK	BLH-20170130A	A	NDI			4	101	097-01-55.2	100.82	<b>SHORT</b>	/3
KGID 60.0 dBu desired distance: 26.0 km						Proposed 40.0 dBu undesired distance: 79.9 km						
<b>KTHE</b>	242	FM	L2C	96.3	LLANO	TX	US	C	30-58-50.6	112.01	117.95	-5.94
198631	BLANK	BLH-20190604A	C3	NDI			25	94	098-41-14.1	310.96	<b>SHORT</b>	/3
KTHE 60.0 dBu desired distance: 38.1 km						Proposed 40.0 dBu undesired distance: 79.9 km						
<b>KJHV-LP</b>	242	FL	L2C	96.3	KILLEEN	TX	US	C	31-07-24.6	89.31	85.46	3.85
135336	BLANK	BLL-20050204A	LP1	NDI			0.049	42	097-41-31	6.59	<b>CLOSE</b>	
KJHV-LP 60.0 dBu desired distance: 5.6 km						Proposed 40.0 dBu undesired distance: 79.9 km						
<b>KHFI-FM</b>	244	FM	L2C	96.7	GEORGETOWN	TX	US	C	30-19-20.7	0.15	72.68	-72.53
11948	BLANK	BLH-19891227K	C1	NDI			100	290	097-48-04	231.41	<b>SHORT</b>	/1
KHFI-FM 60.0 dBu desired distance: 71.6 km						Proposed 100.0 dBu undesired distance: 1.1 km						

/1 There will be contour overlap normally prohibited by Section 74.1204(a). However, based on the U/D signal strength ratio method, which is permitted by the FCC per Living Way Ministries, it has been determined that no actual interference would occur due to lack of population under Section 74.1204(d). See Technical Narrative.

/2 Authorized K241DA operation.

/3 Proposal complies with the contour overlap provisions of Section 74.1204(a). See Figure 3

Figure 3



**COMPLIANCE WITH SECTION 74.1204**

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