

# **Comprehensive Engineering Exhibit**

## **Minor Change Application**

### **Facility ID No. 78074, K230AF**

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This exhibit is for the minor change application of translator K230AF which is seeking to become fill in for standard band station KCQL, and to add a directional antenna to facilitate this action.

#### **Antenna Location**

No change in antenna location, height, or power is being requested, only the replacement of the current non-directional antenna with a directional one. Below as Figure 1 is a spacing study from which it can be determined that this proposal has no prohibited contour overlaps with any other authorized facility. This application does correct the tower location by 1 second latitude and elevation by 1 meter.

#### **Fill-in Qualification**

Below as Figure 2 is a contour and distance map from which it can be determined that this proposal has no prohibited contour extension and is contained within the required radius.

#### **RF Radiation Statement**

The proposed facilities were evaluated in terms of potential radio frequency radiation 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 Scala FMV-MP, 1- element antenna mounted 40 meters above ground. As this element type is not modeled in any current computer program, for purposes of this analysis the FM Model program has been set to calculate values for a "worst case" type of antenna element array of "Ring Stub", operated with an effective radiated power of 0.25 Kilowatts in the vertical plane. At 2 meters above the surface, at 9 meters from the base of the tower, this proposal will contribute worst case, 5.5 microwatts per square centimeter, or 0.55 percent of the allowable ANSI limit for controlled exposure, and 2.75 percent of the allowable limit for uncontrolled exposure. This figure is less than 5% 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% 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. Spacing Study

K230AF overlap study Capstar TX LLC												
REFERENCE	CH#	230D	- 93.9 MHZ, Pwr= 0.25 kw DA, HAAT= 158.0 M, COR= 1894 M				DISPLAY DATES					
36 39 48.0 N.			Average Protected F(50-50)= 16.41 km				DATA 10-05-12					
108 12 55.0 W.			Standard Directional				SEARCH 10-08-12					
CH	CALL	TYPE	ANT	AZI	DIST	LAT	PWR(kw)	INT(km)	PRO(km)	*IN*	*OUT*	
CITY	STATE			<--	FILE #	LNG	HAAT(M)	COR(M)	LICENSEE	(overlap	in km)	
230D	K230AF	LIC_VN		0.0	0.03	36 39 49.0	0.250	31.9	9.6	-51.0*	-69.1*	
	Kirtland	NM		180.0	BLFT19971201TH	108 12 55.0	158	1893	Capstar	Tx LLC		
Translator For KTRA, Farmington, NM- Vertical Polarization Only												
230D	K230AC	LIC DCN		26.1	86.76	37 21 50.0	0.051	70.4	21.4	-3.9	3.2	
	N. La Plata County, CO			206.4	BLFT19940203TB	107 46 57.0	560	3023	Board of Trustees	For Fort		
Translator For KOUR, Durango, CO												
2290C	KXXI	LIC_CX		200.1	124.86	35 36 22.0	100.000	119.2	80.3	-1.5	34.2	
	Gallup	NM		19.8	BLH20090708AJA	108 41 26.0	420	2480	Millennium Media, Inc.			
283C	KKFG	LIC_CX		93.3	38.84	36 38 33.0	100.000	0.0	0.0	28.5R	10.3M	
	Bloomfield	NM		273.6	BMLH20090731ABV	107 46 54.0	331	2188	Capstar	Tx LLC		
231D	K231BB	LIC_V_		288.2	43.54	36 47 04.0	0.010	4.4	3.2	25.6	20.0	
	Shiprock	NM		107.9	BLFT20070618AAU	108 40 44.0		1500	Edgewater	Broadcasting, Inc		
227C2	KKDC	LIC_CX		343.0	93.26	37 27 59.0	50.000	7.5	60.7	67.6	31.6	
	Dolores	CO		162.8	BMLH20040324AFK	108 31 28.0	103	2197	Four Corners	Broadcasting		
233C0	KYAT	LIC_CX		200.1	124.86	35 36 22.0	100.000	11.7	80.3	106.0	43.9	
	Gallup	NM		19.8	BMLH20120514AEP	108 41 26.0	420	2480	Millennium Media, Inc.			
231C	KKXK	LIC_CY		15.1	192.68	38 20 16.0	100.000	127.1	85.4	46.6	79.2	
	Montrose	CO		195.4	BLH19961009KC	107 38 23.0	574	3094	CCR-montrose Iv, LLC			
229D	637456	APP_C_		338.7	81.92	37 21 01.0	0.092	7.8	5.5	56.1	49.5	
	Cortez	CO		158.5	BNPFT20030317C50	108 33 08.7	-49	1949	Radio Assist Ministry, Inc			
227C2	KKDC	CP NCX		340.7	80.98	37 21 05.0	50.000	2.7	26.5	60.1	53.5	
	Dolores	CO		160.5	BPH20120521BFI	108 31 06.0	-67	1954	Four Corners	Broadcasting		
232D	632972	APP_C_		336.3	83.21	37 20 56.0	0.170	0.9	6.4	64.4	75.9	
	Cortez	CO		156.1	BNPFT20030317IAM	108 35 39.0	-54	1906	Spirit Media			
232D	K232DA	LIC DV_		25.5	86.18	37 21 46.0	0.007	0.2	13.5	65.8	71.6	
	Durango	CO		205.8	BLFT20110406ACU	107 47 40.0	561	2996	Native American Christian			
231C	KZRR	LIC_CY		134.9	226.52	35 12 44.0	22.500	140.6	95.9	72.6	110.6	
	Albuquerque	NM		315.9	BLH7522	106 26 58.0	1259	3281	clear channel	Broadcasting		

Terrain database is NGDC 30 SEC , R= 73.215 qualifying spacings or FCC minimum spacings in KM, M= Margin in KM  
Contour distances are on direct line to and from reference station. Reference 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)  
\*\*=affixed to 'IN' or 'OUT' values = site inside protected contour.  
« = Station meets FCC minimum distance spacing for its class.

**Figure 2. Contour Map**

