

TECHNICAL STATEMENT
K249EX DENVER, COLORADO
MOUNTAIN COMMUNITY TRANSLATORS, LLC
FCC FORM 349
FEBRUARY 2017

This Technical Statement is made in support of a minor change application for FM translator station K249EX at Denver, Colorado, facility ID 157657. K249EX seeks to modify its current directional pattern and increase its Effective Radiated Power from 140 watts (0.14 KW) to 250 watts (0.25 KW). It will remain a “fill-in” translator for KBNO(AM) Denver, Colorado. No other changes are being proposed. The following will show that the new proposed operation of K249EX will meet all of the Commissions technical requirements for an FM translator station.

The proposed operation of K249EX specifies an Effective Radiated Power of 0.25 kilowatts. It will operate with a Custom BEXT model TFC2K-D directional antenna with circular polarization. The antenna will be mounted on an existing non-registered tower, with an overall height of 10 meters above the ground. The antenna will be mounted with a Center of Radiation of 10 meters above the ground, and 2253 meters Above Mean Sea Level. The coordinates of this tower are located at N 39° 43' 46.1", W 105° 14' 08.1", NAD 27. This is a multi-user site located on Lookout Mountain. There are several towers and mounting poles at this facility. This will be the only antenna mounted on a 10 meter monopole at this site. It will replace the current antenna system for K248EX at the same height.

Figure 1 is a detailed interference study conducted on channel 249D with these new proposed facilities. It shows that the new operation of K249EX will not cause any

interference to any existing or proposed FM stations on any of the pertinent same channel or adjacent channels to channel 249, with the exception of 2nd adjacent channel station KBCO Boulder, Colorado operating on channel 247C, facility ID 48966.

The proposed operation of K249EX on 249D is located within the protected 60 dBμ contour of 2nd adjacent KBCO. The predicted F(50-50) field strength of KBCO at the proposed K249EX transmitter site is 91.9 dBμ, see figure 2. Therefore, the respective predicted interfering contour F(50-10) generated by the proposed K249EX on channel 249D is an additional 40 dBμ or 131.9 dBμ.

Figure 3 shows the predicted 131.9 dBμ interference contour. The applicant, Mountain Community Translators, LLC, respectfully requests a waiver of C.F.R. 74.1204(d) of the Commission's rules based on the fact that there is no population within the area of predicted interference. There are no homes nearby the proposed existing tower site, which is a privately owned with private access. The transmitter building is uninhabited and does not have indoor plumbing. Should any unforeseen actual interference be caused, the licensee will immediately cease broadcasting with K249EX until such interference can be eliminated.

Figure 4 is a tabulation of the directional antenna pattern.

The proposed operation of K249EX Denver will be considered a “Fill-In” operation for Class B AM station KBNO Denver, Colorado, facility ID 59956. KBNO(AM) operates with 5 kilowatts daytime with a directional antenna system on 1280 kHz. Figure 5 shows that the proposed 60 dBμ contour for the proposed K249EX will not extend beyond the daytime 2.0 mV/m contour of KBNO. It will also not extend beyond a 25 miles radius from the KBNO tower site. Since this is a “Fill-In” translator,

the maximum ERP will not exceed the maximum permissible ERP of 250 watts in any azimuth.

It was found that the new proposed operation of K249EX Denver, Colorado on channel 249D, will satisfy all of the required commission rules and regulations for an FM translator station.

FIGURE 1 - DETAILED CHANNEL INTERFERENCE STUDY

K249EX DENVER, CO, CH. 249D

REFERENCE
39 43 46.1 N.
105 14 08.1 W.

CH# 249D - 97.7 MHZ, Pwr= 0.25 kW DA, HAAT= 0.0 M, COR= 2253 M
Average Protected F(50-50)= 7.09 km
Standard Directional

DISPLAY DATES
DATA 02-07-17
SEARCH 02-07-17

CH CITY	CALL	TYPE STATE	ANT --	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT* (Overlap in km)
247C KBCO Boulder		LIC DEY CO		346.7 166.7	20.98 BMLH19960506KA	39 54 48.0 105 17 32.0	100.000 469	12.3 2583	87.2 Citicasters Licenses, Inc.	-1.2	-66.5*
249L1 KDOH-LP** Golden		CP ____ CO		98.0 278.0	5.11 BNPL20131113AQE	39 43 23.1 105 10 35.2	0.012 85			-16.2*	-62.5**
249C2 KSJL Strasburg		CP _CX CO		103.6 284.3	94.48 BPED20140304ADG	39 31 32.0 104 10 02.0	50.000 150	135.4 1854	51.7 Radio 74 Internationale	-56.7*	2.0
249C2 KZYR Avon		LIC NC_ CO		264.6 83.8	104.40 BLH20010913AAK	39 38 05.0 106 26 47.0	15.000 134	128.7 3028	54.3 Cool Radio, LLC	-35.9*	26.2
249D K249EX Denver		LIC DC_ CO		0.0 0.0	0.00 BLFT20161109ABY	39 43 46.1 105 14 08.1	0.140 2253	24.3 2253	6.1 Mountain Community Transla	-30.1*	-29.6*
249C3 KSJL Strasburg		LIC NH_ CO		91.4 272.1	88.43 BLED20120315AEJ	39 42 19.0 104 12 17.0	25.000 16	99.8 1621	22.7 Radio 74 Internationale	-24.2*	25.1
250L1 NEW Westminster		CP ____ CO		60.4 240.6	21.12 BNPL20131022ANK	39 49 22.5 105 01 15.0	0.100 -13	1619	3.3 Regis University		0.5
249L1 KLPT-LP Louisville		CP ____ CO		18.4 198.5	29.66 BMPL20160909AAS	39 58 58.0 105 07 31.0	0.100 14	1644	3.2 City of Louisville		1.3
250C1 KXBG Cheyenne		CP _CN WY		1.5 181.6	129.46 BPH19981207IC	40 53 42.0 105 11 38.0	100.000 247	111.7 2197	74.7 Citicasters Licenses, Inc.	11.5	41.8
251C KKFM Colorado Springs		LIC _CN CO		163.5 343.8	114.12 BLH19940321KC	38 44 36.0 104 51 44.0	71.000 698	14.1 2949	97.1 Radio License Holding Cbc,	77.8	15.7
251D K251AB Longmont		LIC DCN CO		15.1 195.2	58.74 BLFT19920831TD	40 14 24.0 105 03 19.0	0.250 77	1.0 1615	11.6 Bonneville International C	49.3	46.9
250C1 KXBG Cheyenne		LIC _CN WY		7.2 187.3	153.45 BLH19800229AD	41 06 01.0 105 00 23.0	100.000 165	93.8 2174	63.3 Citicasters Licenses, Inc.	50.7	81.8
248D K248AS Woodland Park		LIC _C_ CO		162.3 342.5	98.25 BLFT20120927AGP	38 53 10.0 104 53 24.0	0.250 -105	10.1 2215	7.1 Educational Communications	65.9	51.5
248D K248AP Silverthorne		LIC _H_ CO		260.0 79.5	72.50 BLFT20010713ABO	39 36 50.0 106 04 02.0	0.105 -288	8.1 2861	5.7 Skandia, LLC	53.0	56.6
248C3 KWUZ Poncha Springs		CP NCX CO		205.7 25.2	157.01 BPH20150212ABF	38 27 11.0 106 01 02.0	0.250 834	65.6 3575	45.5 Three Eagles Communication	77.0	100.9
247D DK247BY Vail		CP _C_ CO		264.6 83.8	104.40 BNPFT20130830AHQ	39 38 05.0 106 26 47.0	0.010 37	0.2 2963	9.1 Educational Communications	92.5	94.2
248C2 KSRX Sterling		LIC _CX CO		64.9 246.2	195.08 BMLH20100204ADR	40 27 15.1 103 09 06.1	38.000 171	81.0 1492	54.9 Media Logic LLC	103.6	124.7
248A KWUZ Poncha Springs		LIC ZCX CO		205.7 25.2	157.01 BLH20080109AGB	38 27 11.0 106 01 02.0	0.029 892	20.8 3575	12.8 Three Eagles Communication	121.8	125.7
252C1 KATR-FM Otis		LIC NC_ CO		67.6 249.0	207.96 BLH19991115AAT	40 25 13.0 102 58 10.0	100.000 169	7.3 1500	59.5 Media Logic, LLC	190.0	148.2
249C2 KNOZ Orchard Mesa		LIC NCX CO		257.4 75.2	311.20 BLH20120127AIR	39 04 00.0 108 44 45.0	5.000 446	149.2 2239	66.8 Varecha, Paul	150.7	220.4
252C3 KEJJ Gunnison		RSV-A _N CO		227.6 46.5	197.11	38 31 22.0 106 54 28.0	25.000 100	2.3 2638	22.7 John Harvey Rees	186.2	154.9
251C0 KAYW Meeker		CP _CX CO		283.6 101.9	236.35 BPH20161212AAI	40 11 47.0 107 56 04.0	100.000 372	8.5 2637	64.8 Western Slope Communicatio	216.0	164.1
246C1 DKGGY Stratton		VAC ____ CO		100.6 282.3	235.20	39 18 34.0 102 33 17.0	100.000 299	9.7 1620	70.5 Kona Coast Radio, LLC	209.7	164.4
246A KAYV Crested Butte		LIC _CX CO		239.0 57.9	175.69 BLH20111205AGJ	38 54 10.0 106 58 22.0	0.300 -211	1.2 2967	7.4 Arkansas Valley Broadcasti	165.1	167.2
251C0 KAYW Meeker		LIC _C_ CO		283.6 101.8	236.24 BLH20070802ABI	40 11 45.0 107 56 00.0	100.000 349	7.9 2609	62.2 Western Slope Communicatio	216.5	165.9

CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	Page # 2 *IN* (Overlap in km)	*OUT*
252A Gunnison	KEJJ	LIC _CN CO		227.6 46.5	197.11 BLH19811216AQ	38 31 22.0 106 54 28.0	3.000 91	1.6 2627	13.2 John Harvey Rees	186.9	170.0
246C1 Terrytown	KCMI	LIC _CX NE		30.3 211.3	255.33 BLH20160525AAB	41 42 08.0 103 41 00.0	100.000 211	7.4 1521	60.1 Christian Media Incorporat	239.1	194.8
250C1 Colby	KWGB	LIC _C_ KS		95.7 278.0	318.15 BLH19981216KD	39 23 24.0 101 33 35.0	100.000 216	94.0 1296	63.6 Melia Communications Inc	209.4	237.7
247A Lake City	NEW	CP _CX CO		223.8 42.5	264.25 BNPH20151013AIR	37 59 43.4 107 19 16.9	1.022 242	1.9 3605	24.8 Munera, Campo E	253.2	216.0
246C3 La Jara	KZBR	LIC _CX CO		196.5 15.9	273.04 BLH20080416AAD	37 22 05.0 106 06 44.0	25.000 55	4.6 2458	43.1 Wolf Creek Broadcasting, L	251.1	228.9
252C3 Blanca	KAPK	CP NCX CO		188.1 7.9	262.56 BMPH20170103ABV	37 23 14.0 105 39 21.0	2.800 156	2.6 2474	29.2 Mainstreet Broadcasting Co	240.8	232.3
252A Torrington	KERM	LIC _CN WY		18.7 199.4	266.23 BLH7692	41 59 41.0 104 12 05.0	3.000 91	2.1 1370	22.0 Kath Broadcasting Co, LLC	255.8	244.2
249C2 Rolling Hills	KCYA	LIC _CX WY		345.4 164.6	346.34 BLH20100707KNL	42 44 28.0 106 18 31.0	3.600 506	87.9 2473	31.0 Cochise Media Licenses LLC	249.1	282.5
248C1 Chadron	KQSK	LIC _CN NE		28.2 209.6	368.95 BLH19790910AA	42 38 06.0 103 06 12.0	100.000 256	93.8 1519	63.2 Eagle Communications, Inc.	266.4	295.0
249L1 Ogallala	KQOO-LP	LIC _ NE		61.3 243.6	337.19 BLL20170201AAF	41 07 55.0 101 42 40.0	0.063 10	1020	310.7 Adventist Learning Center		294.6
250C Cortez	KISZ-FM	LIC _CN CO		224.8 43.0	365.43 BLH19780921AG	37 21 48.0 108 09 00.0	100.000 399	59.1 3104	31.0 Winton Road Broadcasting C	297.3	315.0
246C1 Moab	KCYN	LIC _CX UT		250.4 67.9	376.43 BLH19981223KB	38 31 37.0 109 18 21.0	29.000 394	2.4 2767	23.5 Moab Communications, LLC	363.4	326.1

Terrain database is NGDC 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)
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

* No actual interference will be caused to KBCO(FM) since the worse case 131.9 DBU interference contour will not cover any population. See the Technical Statement for more details.

** KDOH-LP Golden, Colorado, Construction Permit, BNPL-20131113AQE, facility ID 196557, expired on February 7th, 2017.

FIGURE 2 - KBCO PREDICTED 91.9 DBU CONTOUR
K281BW DENVER, CO. CH. 249D

Coverage Study - NGDC 30 SEC
02-07-2017

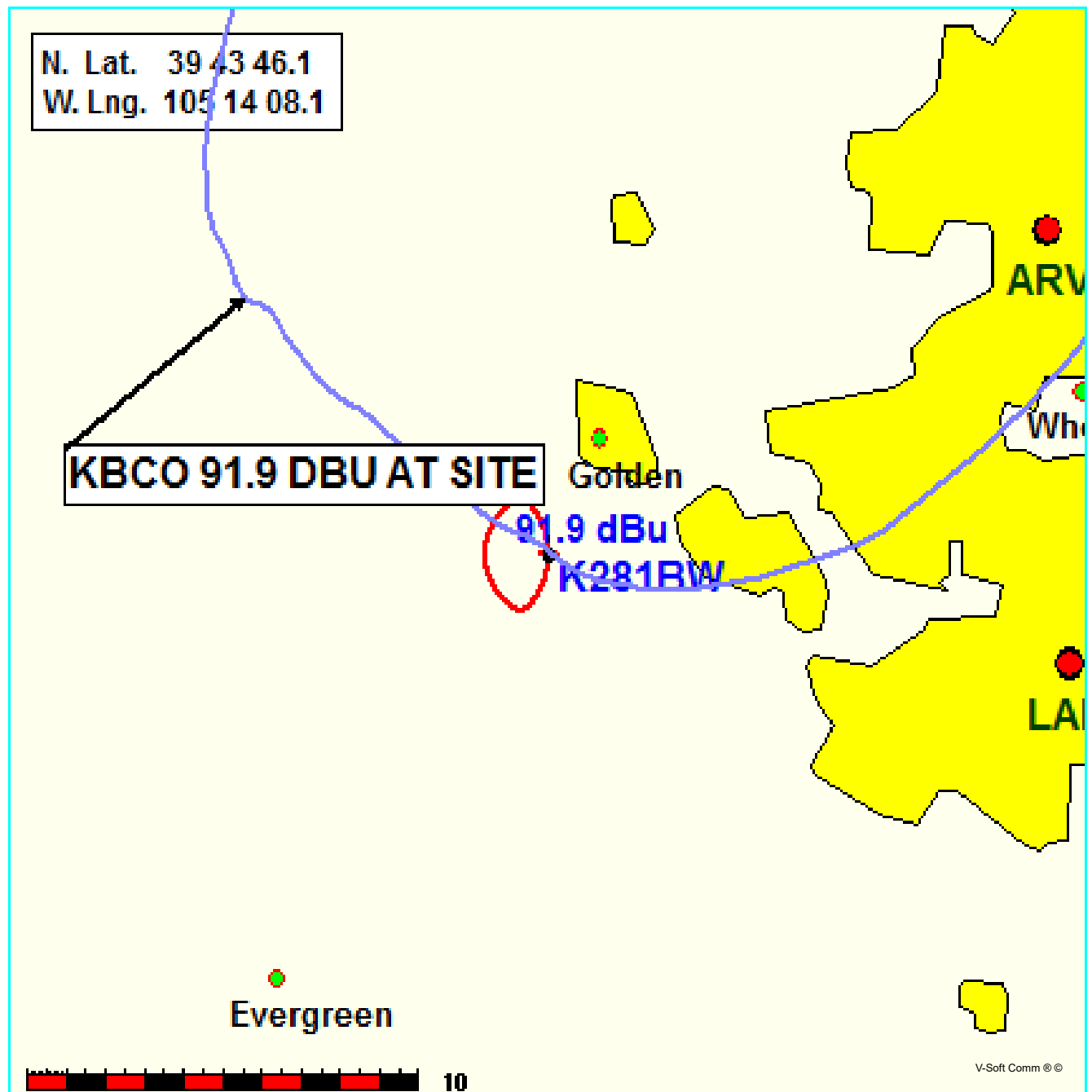


FIGURE 3 - PREDICTED 131.9 DBU INTERFERENCE CONTOUR
K249EX DENVER, CO, CH. 249D

Coverage Study - NGDC 30 SEC
02-07-2017

K249EX CH249 D , 0.25 kW, 0.0m HAAT, 2253.0m COR AMSL
Interference Contour = 131.9 dBu. Population = 0

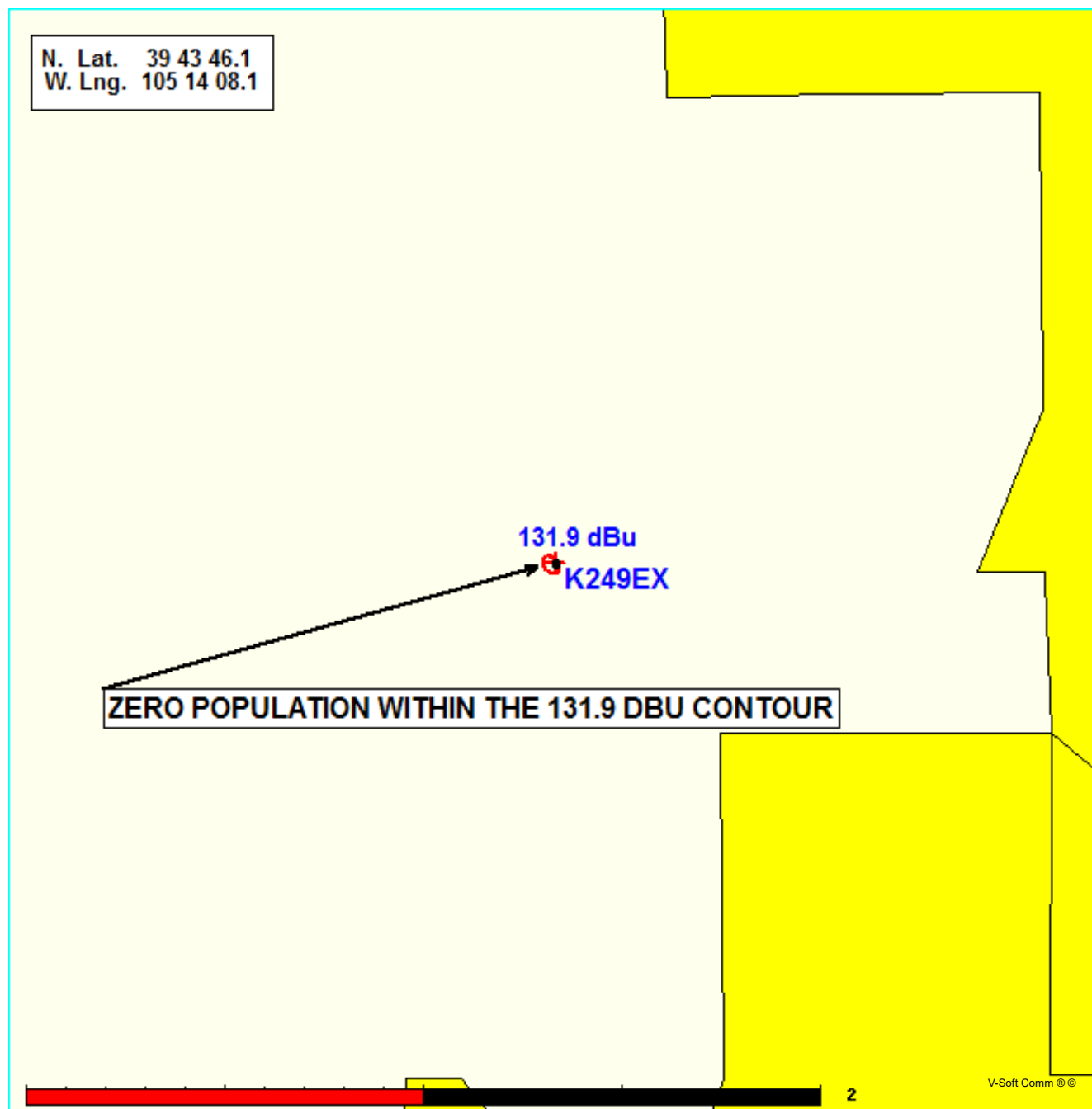


FIGURE 4 - DIRECTIONAL ANTENNA DATA

K249EX

02-07-2017

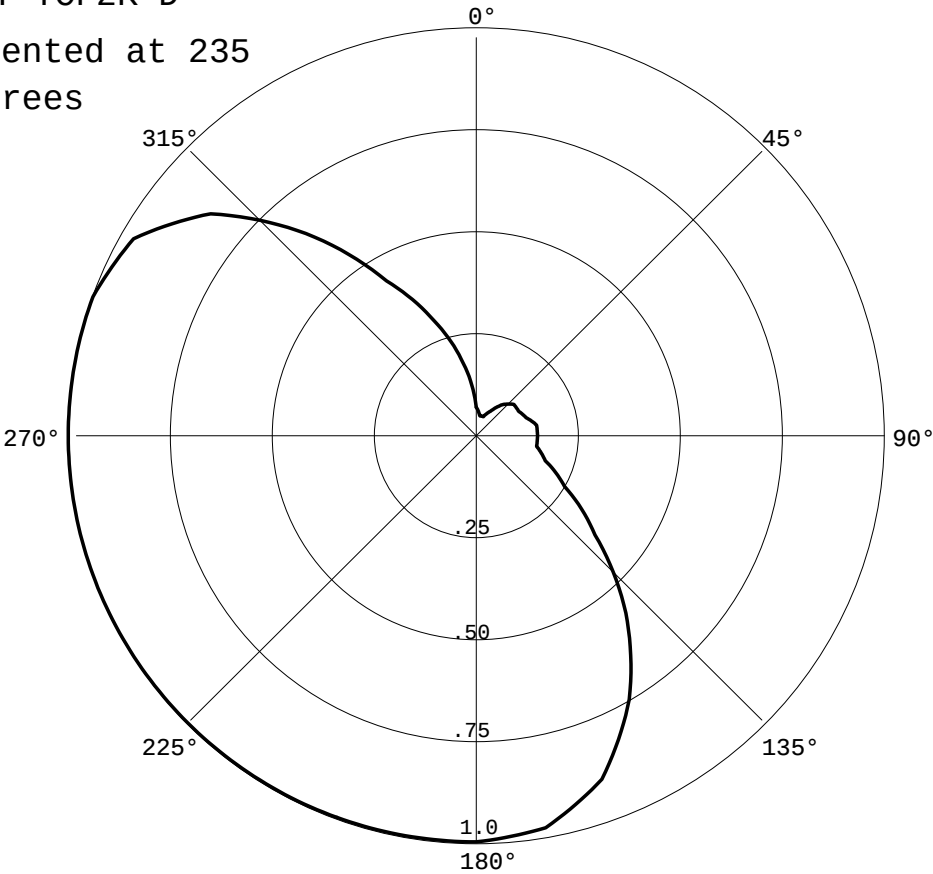
RMS(V)= .695

BEXT TCF2K-D

Graph is Relative Field

Oriented at 235
Degrees

Azi	Field	dBk	kW
000	0.070	-29.119	0.001
010	0.050	-32.041	0.001
020	0.050	-32.041	0.001
030	0.070	-29.119	0.001
040	0.100	-26.021	0.003
050	0.120	-24.437	0.004
060	0.120	-24.437	0.004
070	0.130	-23.742	0.004
080	0.150	-22.499	0.006
090	0.150	-22.499	0.006
100	0.150	-22.499	0.006
110	0.180	-20.915	0.008
120	0.250	-18.062	0.016
130	0.380	-14.425	0.036
140	0.570	-10.903	0.081
150	0.750	-08.519	0.141
160	0.900	-06.936	0.202
170	0.980	-06.196	0.240
180	1.000	-06.021	0.250
190	1.000	-06.021	0.250
200	1.000	-06.021	0.250
210	1.000	-06.021	0.250
220	1.000	-06.021	0.250
230	1.000	-06.021	0.250
240	1.000	-06.021	0.250
250	1.000	-06.021	0.250
260	1.000	-06.021	0.250
270	1.000	-06.021	0.250
280	1.000	-06.021	0.250
290	1.000	-06.021	0.250
300	0.970	-06.285	0.235
310	0.850	-07.432	0.181
320	0.650	-09.762	0.106
330	0.440	-13.152	0.048
340	0.300	-16.478	0.023
350	0.180	-20.915	0.008



K249EX

BLFT20161109ABY

Latitude: 39-43-46.10 N

Longitude: 105-14-08.10 W

ERP: 0.25 kW

Channel: 249

Frequency: 97.7 MHz

AMSL Height: 2253.0 m

Elevation: 2243.0 m

Horiz. Pattern: Directional

Vert. Pattern: No

Prop Model:

**FIGURE 5 - FILL-IN MAP
WITH KBNO(AM) DENVER**