TECHNICAL STATEMENT
K249EX DENVER, COLORADO
MOUNTAIN COMMUNITY TRANSLATORS, LLC
FCC FORM 349
AUGUST 2019

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 keep its Effective Radiated Power at 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 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 vertical pattern study showing an interference study with KBCO.

Figure 5 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 6 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 CH# 249D - 97.7 MHz, Pwr= 0.25 kW DA, HAAT= 0.0 M, COR= 2253 M DISPLAY DATES
39 43 46.1 N. Average Protected F(50-50)= 7.09 km DATA 08-07-19
105 14 08.1 W. Standard Directional SEARCH 08-12-19

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)	
249D	K249EX	LIC	DC_	0.0	0.00	39 43 46.1	0.250		---Reference---		
Denver		CO		0.0	BLFT20180316AAA	105 14 08.1		2253	Mountain Community Transla		
247C	KBCO	LIC	DEY	346.7	20.98	39 54 48.0	100.000	12.3	87.2	-13.3*	-67.4*
Boulder		CO		166.7	BMLH19960506KA	105 17 32.0	469	2583	Citicasters Licenses, Inc.		
249C2	KSJL	CP	_HX	103.6	94.48	39 31 32.0	40.000	125.0	40.3	-46.9*	0.9
Strasburg		CO		284.3	BPED20190607AAA	104 10 02.0	89	1793	Radio 74 Internationale		
249C2	KZYR	LIC	NC_	264.6	104.40	39 38 05.0	15.000	128.7	54.3	-35.9*	26.2
Avon		CO		83.8	BLH20010913AAK	106 26 47.0	134	3028	Rocky Mountain Radio Group		
249C3	KSJL	LIC	NH_	91.4	88.43	39 42 19.0	25.000	99.8	22.7	-31.0*	12.0
Strasburg		CO		272.1	BLED20120315AEJ	104 12 17.0	16	1621	Radio 74 Internationale		
250C1	KXBG	LIC	_CX	1.4	129.45	40 53 41.7	100.000	118.3	78.1	-15.2	8.2
Cheyenne		WY		181.5	BLH20180214AAD	105 11 49.4	293	2248	Citicasters Licenses, Inc.		
251C	KKFM	LIC	_CN	163.5	114.12	38 44 36.0	71.000	15.0	97.1	75.7	15.7
Colorado Springs		CO		343.8	BLH19940321KC	104 51 44.0	698	2949	Radio License Holding Cbc,		
251D	K251AB	LIC	DCN	15.1	58.74	40 14 24.0	0.250	1.0	11.6	30.5	45.9
Longmont		CO		195.2	BLFT19920831TD	105 03 19.0	77	1615	Bonneville International C		
248D	K248AS	LIC	_C_	162.3	98.25	38 53 10.0	0.250	10.1	7.1	64.3	49.6
Woodland Park		CO		342.5	BLFT20120927AGP	104 53 24.0	-105	2215	Educational Communications		
248D	K248AP	LIC	_H_	260.0	72.50	39 36 50.0	0.105	8.1	5.7	53.0	56.6
Silverthorne		CO		79.5	BLFT20010713ABO	106 04 02.0	-288	2861	Skandia, Llc		
252D	K206DB	CP	DC_	3.1	84.94	40 29 36.0	0.011	0.0	3.3	58.1	80.3
Fort Collins		CO		183.1	BPFT20190624AAG	105 10 53.0		2081	Cedar Cove Broadcasting, I		
248C3	KWUZ	LIC	NCX	205.7	157.01	38 27 11.0	0.250	65.5	45.5	76.7	100.9
Poncha Springs		CO		25.2	BLH20170831BCE	106 01 02.0	834	3575	Three Eagles Communication		
248C2	KSRX	LIC	_CX	64.9	195.08	40 27 15.1	38.000	81.7	54.9	87.8	103.6
Sterling		CO		246.2	BMLH20100204ADR	103 09 06.1	171	1492	Media Logic Llc		
252C1	KATR-FM	LIC	NC_	67.6	207.96	40 25 13.0	100.000	7.3	59.5	175.5	147.8
Otis		CO		249.0	BLH19991115AAT	102 58 10.0	169	1500	Media Logic, Llc		
249C2	KNOZ	LIC	NCX	257.4	311.20	39 04 00.0	5.000	149.2	66.8	150.7	220.4
Orchard Mesa		CO		75.2	BLH20120127AIR	108 44 45.0	446	2239	Varecha, Paul		
252C3	KEJJ	RSV-A	__N	227.6	197.11	38 31 22.0	25.000	2.3	22.7	186.2	154.9
Gunnison		CO		46.5		106 54 28.0	100	2638	John Harvey Rees		
252C3	KEJJ	CP	_CX	227.6	197.01	38 31 22.7	12.000	1.9	19.0	186.5	159.5
Gunnison		CO		46.5	BPH20180503ABP	106 54 22.8	111	2647	John Harvey Rees		
251C0	KAYW	CP	_CX	283.6	236.35	40 11 47.0	100.000	8.5	64.8	216.0	164.1
Meeker		CO		101.9	BPH20161212AAI	107 56 04.0	372	2637	Western Slope Communicatio		
246C1	DKGGY	VAC	___	100.6	235.20	39 18 34.0	100.000	9.7	70.5	206.9	164.3
Stratton		CO		282.3		102 33 17.0	299	1620	Kona Coast Radio, Llc		
246A	KAYV	LIC	_CX	239.0	175.69	38 54 10.0	0.300	1.2	7.4	165.1	167.2
Crested Butte		CO		57.9	BLH20111205AGJ	106 58 22.0	-211	2967	Arkansas Valley Broadcasti		
251C0	KAYW	LIC	_C_	283.6	236.24	40 11 45.0	100.000	7.9	62.2	216.5	165.9
Meeker		CO		101.8	BLH20070802ABI	107 56 00.0	349	2609	Western Slope Communicatio		
252A	KEJJ	LIC	_CN	227.6	197.11	38 31 22.0	3.000	1.6	13.2	186.9	170.0
Gunnison		CO		46.5	BLH19811216AQ	106 54 28.0	91	2627	John Harvey Rees		
246C1	KCMI	LIC	_CX	30.3	255.33	41 42 08.0	100.000	7.4	60.1	219.4	193.9
Terrytown		NE		211.3	BLH20160525AAB	103 41 00.0	211	1521	Christian Media Incorporat		
247A	AU9850949	VAC	___	224.3	261.04	38 01 47.0	6.000	1.6	20.0	250.3	201.9
Lake City		CO		42.9	RM9938	107 18 52.0	100	3460	Packer Radio Project		
250C1	KWGB	LIC	_C_	95.7	318.15	39 23 24.0	100.000	94.6	63.6	204.2	232.0
Colby		KS		278.0	BLH19981216KD	101 33 35.0	216	1296	Melia Communications Inc		

CH CALL / CITY	TYPE ANT / STATE	AZI / <--	DIST / FILE #	LAT / LNG	PWR(kW) / HAAT(M)	INT(km) / COR(M)	PRO(km) / LICENSEE	*IN* / (Overlap in km)	*OUT*
246C3 KZBR La Jara	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	250.7	228.9
249C2 KCYA Rolling Hills	LIC _CX WY	345.4 164.6	346.34 BLH20100707KNL	42 44 28.0 106 18 31.0	3.600 506	88.2 2473	31.0 Cochise Media Licenses Llc	232.8	243.0
252A KERM Torrington	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	236.3	243.1
248C1 KQSK Chadron	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.	246.7	260.8
251A DKNPE Bayard	VAC ___ NE	33.6 214.9	285.66	41 51 12.0 103 19 33.0	6.000 100	3.4 1331	35.6 In Phase Broadcasting, Inc	253.8	249.0
249L1 KQQO-LP Ogallala	LIC ___ NE	61.3 243.6	337.19 BLL20170201AAF	41 07 55.0 101 42 40.0	0.063 10	 1020	 Adventist Learning Center	294.8	256.6
250C KISZ-FM Cortez	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	297.2	315.0
246C1 KCYN Moab	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 worst case 131.9 dBu interference contour will not cover any population. See the Technical Statement for more details.

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

Coverage Study - NGDC 30 SEC
02-07-2017

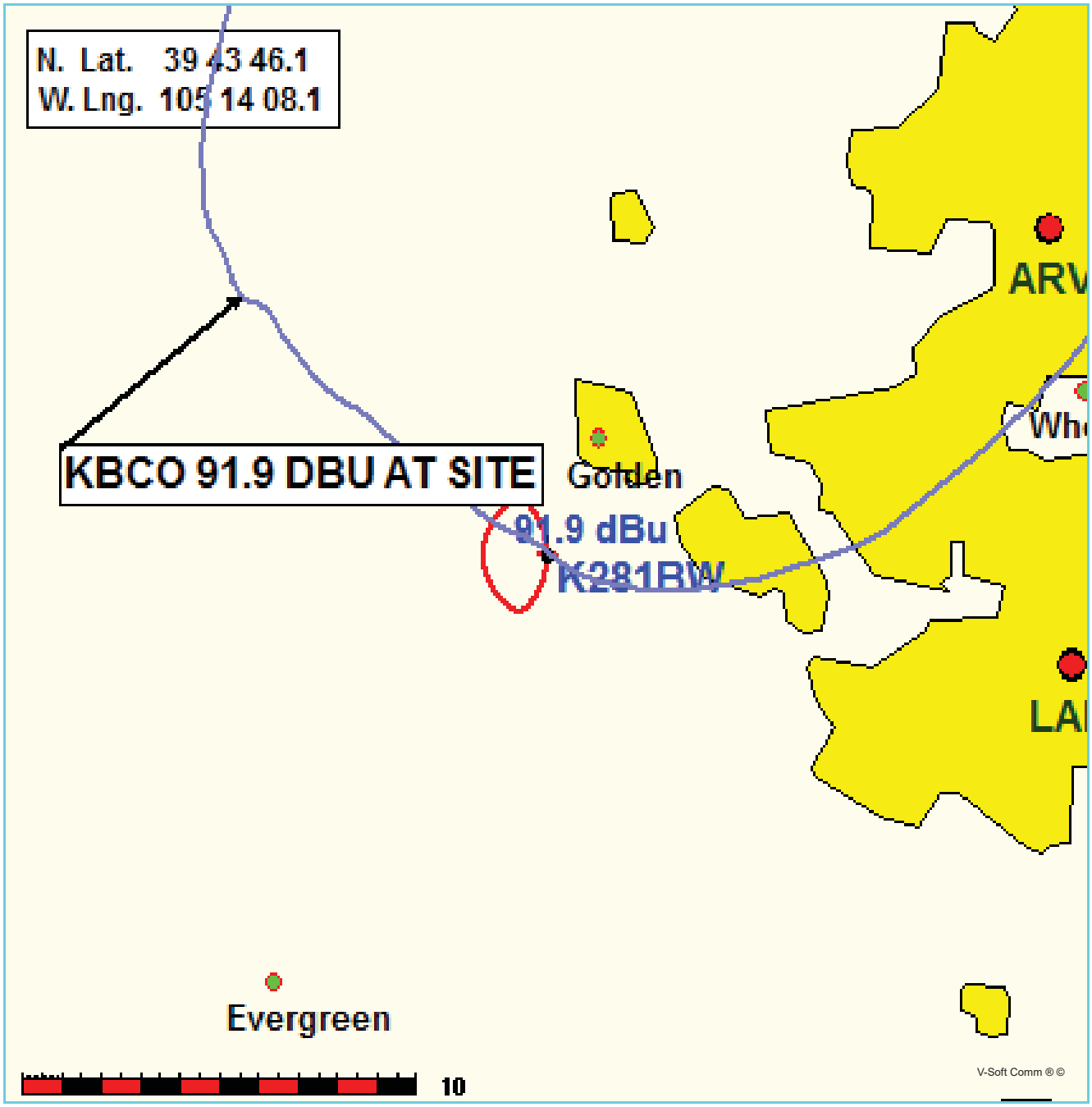
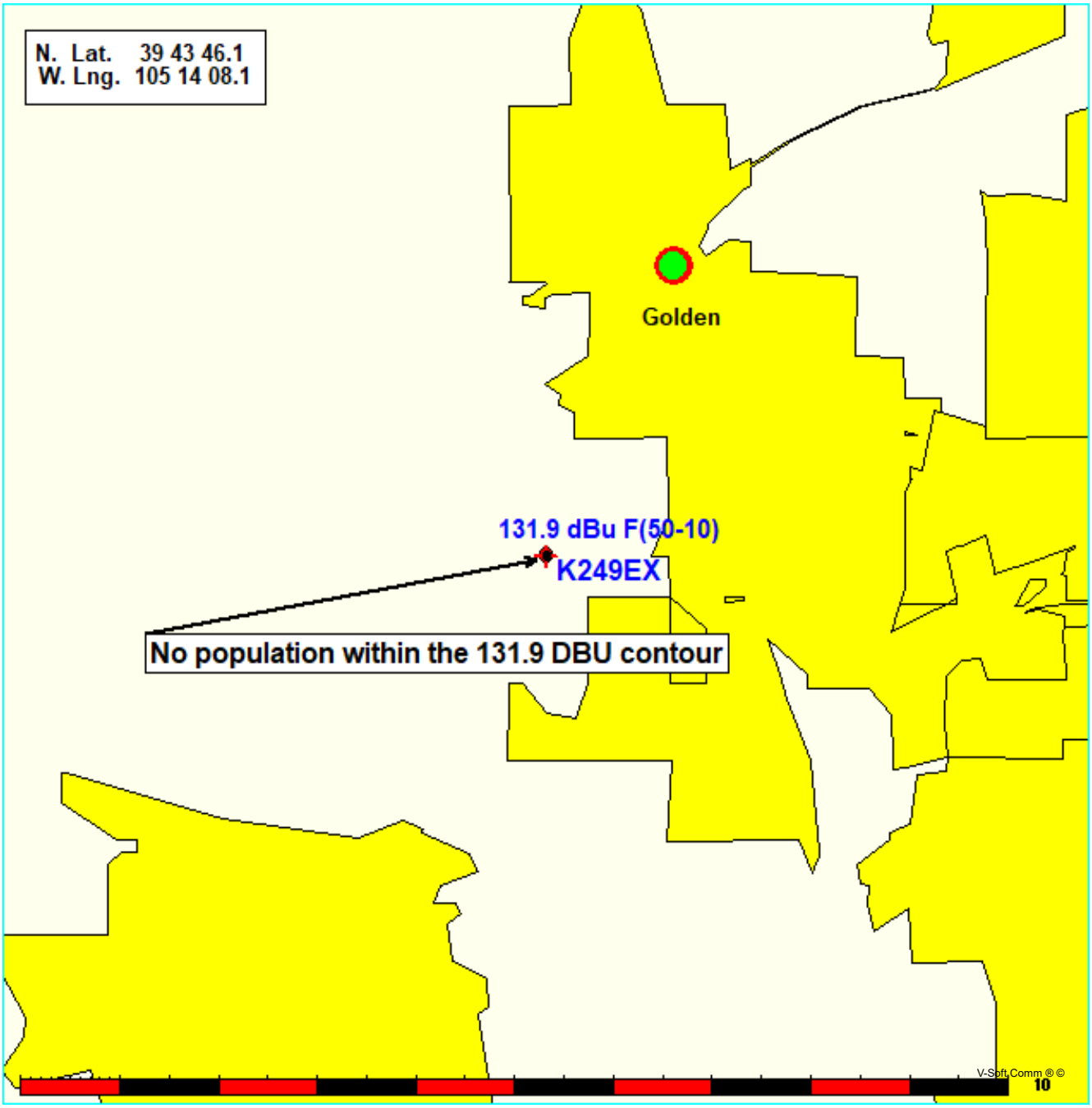


FIGURE 3- PREDICTED 131.9 INTERFERENCE CONTOUR
K249EX DENVER, CO, CH. 249D

Coverage Study - NGDC 30 SEC
08-12-2019

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



K249EX Denver, CO, Showing Protection to KBCO   , Channel: 247
Geographic Coordinates: N. 39 43 46.10 W. 105 14 08.10
74.1204(d) Study - Using USGS 03 SEC Terrain Database
Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 249
Translator or LPFM Antenna Height AG = 10 meters
K249EX Antenna Model = BEXT TFC2-K

Protected Station's Contour = 92.16211 dBu
Translator's or LPFM's full Interference contour 132.16211

Review Azimuth = 0 Degrees True
Horizontal Relative Field at Review Azimuth = 1.000
Translator/LPFM ERP on the horizontal at Review Azimuth = 0.25 kW
Distance between stations = 21.0 km
Protected Station= KBCO, 100 kW, 2583 M meters COR AMSL

Depression Angle From Degree(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.2500	027.3442	027.3442	010.000
05.00	0.994	1.0	0.2468	027.1664	027.0630	007.632
10.00	0.98	1.0	0.2401	026.7973	026.3902	005.347
15.00	0.953	1.0	0.2268	026.0453	025.1578	003.259
20.00	0.917	1.0	0.2100	025.0609	023.5496	001.429
25.00	0.873	1.0	0.1903	023.8578	021.6225	-000.083
30.00	0.818	1.0	0.1671	022.3538	019.3590	-001.177
35.00	0.756	1.0	0.1427	020.6585	016.9225	-001.849
40.00	0.69	1.0	0.1190	018.8675	014.4533	-002.128
45.00	0.618	1.0	0.0953	016.8850	011.9395	-001.940
50.00	0.544	1.0	0.0738	014.8615	009.5528	-001.385
55.00	0.468	1.0	0.0546	012.7834	007.3323	-000.472
60.00	0.39	1.0	0.0380	010.6642	005.3321	000.765
65.00	0.3	1.0	0.0225	008.2032	003.4668	002.565
70.00	0.19	1.0	0.0090	005.1954	001.7769	005.118
75.00	0.11	1.0	0.0030	003.0079	000.7785	007.095
80.00	0.05	1.0	0.0006	001.3672	000.2374	008.654
85.00	0.03	1.0	0.0002	000.8203	000.0715	009.183
90.00	0.03	1.0	0.0002	000.8203	000.0000	009.180

FIGURE 5 - DIRECTIONAL ANTENNA DATA

K249EX 08-12-2019 RMS(V)= .879

Graph is Relative Field

Azi	Field	dBk	kW
000	1.000	-06.021	0.250
010	1.000	-06.021	0.250
020	0.980	-06.196	0.240
030	0.950	-06.466	0.226
040	0.875	-07.180	0.191
050	0.760	-08.404	0.144
060	0.600	-10.458	0.090
070	0.435	-13.251	0.047
080	0.300	-16.478	0.023
090	0.250	-18.062	0.016
100	0.250	-18.062	0.016
110	0.300	-16.478	0.023
120	0.435	-13.251	0.047
130	0.600	-10.458	0.090
140	0.760	-08.404	0.144
150	0.875	-07.180	0.191
160	0.950	-06.466	0.226
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	1.000	-06.021	0.250
310	1.000	-06.021	0.250
320	1.000	-06.021	0.250
330	1.000	-06.021	0.250
340	1.000	-06.021	0.250
350	1.000	-06.021	0.250

BEXT CUSTOM

TFC2-K

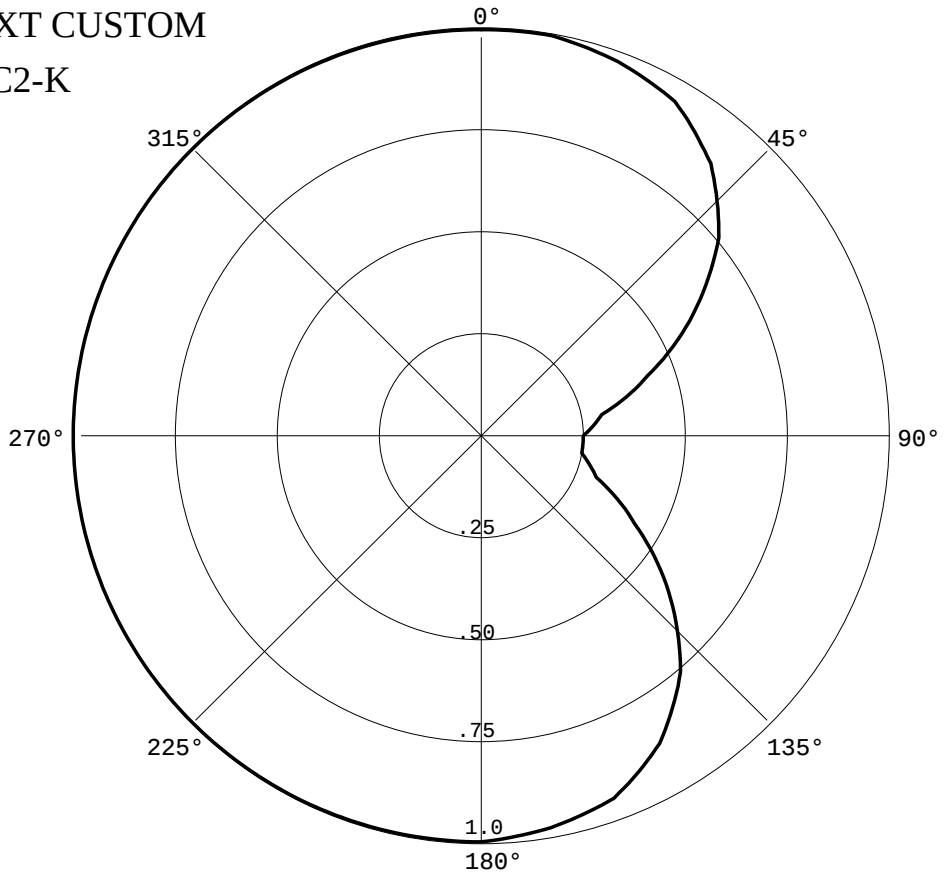


FIGURE 6 - FILL-IN MAP WITH KBNO(AM)
K249EX DENVER, CO, CH. 249D

Coverage Study - NGDC 30 SEC
08-12-2019

K249EX CH249 D , 0.25 kW, 0.0m HAAT, 2253.0m COR AMSL
Service Contour = 60 dBu. Population = 690,884