

TECHNICAL STATEMENT
MINOR CHANGE APPLICATION
K251CV GOLDEN, COLORADO
MOUNTAIN COMMUNITY TRANSLATORS, LLC
MAY 2023

This Technical Statement is made in support of a minor change application for FM translator station K251CV Golden Colorado, facility ID 157875. K251CV is a fill-in translator for KRKS(FM) Lakewood, Colorado, facility ID 35574. K251CV seeks to remain at its existing communications site located on Lookout Mountain near Golden, Colorado with its same antenna heights. K251CV is only seeking to make modifications to its directional antenna system.

Figure 1 is a detailed channel interference study conducted on channel 251D with these new proposed facilities. It shows that the new operation of K251CV will not cause any interference to any existing or proposed FM stations on any of the pertinent same channel or adjacent channels to channel 251, with the exception of 2nd adjacent channel station K249EX Denver, CO, facility ID 157657 on channel 249D, and 2nd adjacent channel station KYGO-FM Denver, CO, facility ID 30829 operating on channel 253C.

Figure 2 shows that K249EX places a 108.8 dB μ contour at the new K251CV site. Figure 3 shows that KYGO-FM places a 103.0 dB μ contour at the new K251CV site. Since KYGO-FM produces a lower signal at the proposed site, it was studied further. The calculated worst case interference contour for K251CV would be 143.0 dB μ . This contour would only extend 7.9 meters from the antenna in any direction. Thus, with a COR of 13 meters above ground, it would not reach the ground at any point. This was also verified by a Vertical Pattern study conducted utilizing the proposed Nicom combo BKG1P and BLK5 antenna system vertical pattern. Figure 5 shows the results of that study. It shows that the interference contour will be

no less than 12 meters about the ground in any azimuth. Lastly, figure 4 shows the predicted worst case 143.0 dB μ contour showing there will be no population within this contour.

The 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 gated access applicant. K251CV will be located at a communications site known as "Lookout Mountain". 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 K251CV until such interference can be eliminated.

Figure 6 is the directional antenna data for the proposed Nicom antenna system to be used.

The proposed operation of K251CV Golden will remain a "Fill-In" operation for KQKS(FM) Lakewood, Colorado. Figure 7 shows that the proposed 60 dB μ contour for the proposed K251CV will not extend beyond the 60 dB μ of KQKS(FM). Since this is a "Fill-In" translator, the maximum ERP will not exceed the maximum permissible ERP of 250 watts in any azimuth.

Figure 8 and 9 are more detailed interference studies against KKFM(FM) and K251AB

It was found that the new proposed operation of K251CV on channel 251D, will satisfy all of the required commission rules and regulations for an FM translator station.

FIGURE 1 - DETAILED INTERFERENCE STUDY

K251CV Golden, CO, Ch. 251D

REFERENCE
39 43 59.00 N.
105 14 14.00 W.

CH# 251D - 98.1 MHz, Pwr= 0.25 kW DA, HAAT= 185.8 M, COR= 2235 M
Average Protected F(50-50)= 17.89 km
Standard Directional

DISPLAY DATES
DATA 05-27-23
SEARCH 05-27-23

| CH CITY | CALL | TYPE STATE | ANT AZI <-- | DIST FILE # | LAT LNG | PWR(kw) HAAT(M) | INT(km) COR(M) | PRO(km) LICENSEE | *OUT* (Overlap in km) |
|--------------------------|-----------|---------------|-------------------|----------------------------|-----------------------------|--------------------|-------------------|---|--------------------------|
| 251D Golden | K251CV | LIC DCN CO | 0.0 0.0 | 0.00 0000125558 | 39 43 59.00 105 14 14.00 | 0.250 | 2235 | ---Reference--- Mountain Community Transla | |
| 253C0 Denver | KYGO-FM * | LIC DCN CO | 166.0 346.0 | 6.82 BLH20180912ABA | 39 40 24.30 105 13 04.50 | 100.000 341 | 7.7 2364 | 62.0 Bonneville International C | -55.2* |
| 249D Denver | K249EX * | LIC DCN CO | 166.9 346.9 | 0.40 0000086444 | 39 43 46.10 105 14 10.10 | 0.250 | 1.1 2253 | 16.9 Latino Communications, LLC | -16.5* |
| 251C Colorado Springs | KKFM | LIC _CN CO | 163.5 343.8 | 114.53 BLH19940321KC | 38 44 35.90 104 51 45.90 | 71.000 698 | 213.2 2949 | 96.3 Radio License Holding Cbc, | 1.2 |
| 251D Longmont | K251AB | LIC DCN CO | 15.3 195.4 | 58.37 BLFT19920831TD | 40 14 23.90 105 03 20.90 | 0.250 77 | 37.0 1615 | 11.9 Bonneville International C | 3.8 |
| 250C1 Cheyenne | KXBG | LIC _CN WY | 1.5 181.5 | 129.05 BLH20180214AAD | 40 53 41.60 105 11 51.30 | 100.000 293 | 118.3 2248 | 77.1 Ihm Licenses, LLC | 25.6 |
| 249C2 Avon | KZYR | LIC NCN CO | 264.4 83.6 | 104.35 BLH20010913AAK | 39 38 04.90 106 26 49.10 | 15.000 134 | 5.4 3028 | 53.5 Kns Broadcasting, LLC | 46.2 |
| 249C2 Strasburg | KPLS-FM | CP _HN CO | 103.8 284.5 | 94.65 0000193930 | 39 31 32.30 104 10 04.20 | 50.000 87 | 4.8 1791 | 42.4 Radio 74 Internationale | 51.1 |
| 252D Fort Collins | K252GG | LIC DCN CO | 3.2 183.2 | 84.54 0000195144 | 40 29 35.90 105 10 54.90 | 0.011 | 6.0 2081 | 3.4 Cedar Cove Broadcasting, I | 59.6 |
| 249C3 Strasburg | KPLS-FM | LIC NHN CO | 91.7 272.3 | 88.54 BLED20120315AEJ | 39 42 18.90 104 12 18.80 | 25.000 16 | 2.3 1621 | 22.7 Radio 74 Internationale | 65.3 |
| 248D Silverthorne | K248AP | LIC _HN CO | 259.7 79.2 | 72.48 BLFT20010713ABO | 39 36 49.90 106 04 04.00 | 0.105 -288 | 0.7 2861 | 5.7 Krayon's Wild Basin, LLC | 65.7 |
| 254D Fort Collins | K254CH | LIC DCN CO | 2.1 182.1 | 90.36 0000202592 | 40 32 46.90 105 11 54.80 | 0.010 | 0.1 2188 | 5.6 Boulder Community Broadcas | 82.0 |
| 248D Woodland Park | K248AS | LIC _CN CO | 162.3 342.5 | 98.67 BLFT20120927AGP | 38 53 09.90 104 53 25.90 | 0.250 -105 | 1.1 2215 | 7.1 Educational Communications | 85.9 |
| 252C1 Otis | KATR-FM | LIC NCN CO | 67.7 249.1 | 207.90 BLH19991115AAT | 40 25 13.00 102 58 11.80 | 100.000 169 | 88.3 1500 | 58.7 Media Logic, LLC | 102.1 |
| 253D Colorado Springs | K253AH | LIC DCN CO | 162.8 343.1 | 111.77 BMLFT20120312AAD | 38 46 14.90 104 51 21.90 | 0.180 -85 | 0.1 2142 | 2.4 Power 98.5, LLC | 105.0 |
| 248C3 Poncha Springs | KWUZ | LIC NCN CO | 205.6 25.1 | 157.33 BLH20170831BCE | 38 27 10.90 106 01 04.00 | 0.250 834 | 1.1 3575 | 45.2 Three Eagles Communication | 111.3 |

Terrain database is GLOBE 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)
Incoming contour overlap is ignored.
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

* No actual interference will be caused to either KYGO-FM or K249EX since the worse case 143 dBu interference contour will not cover any population. See the Technical Statement for more details.

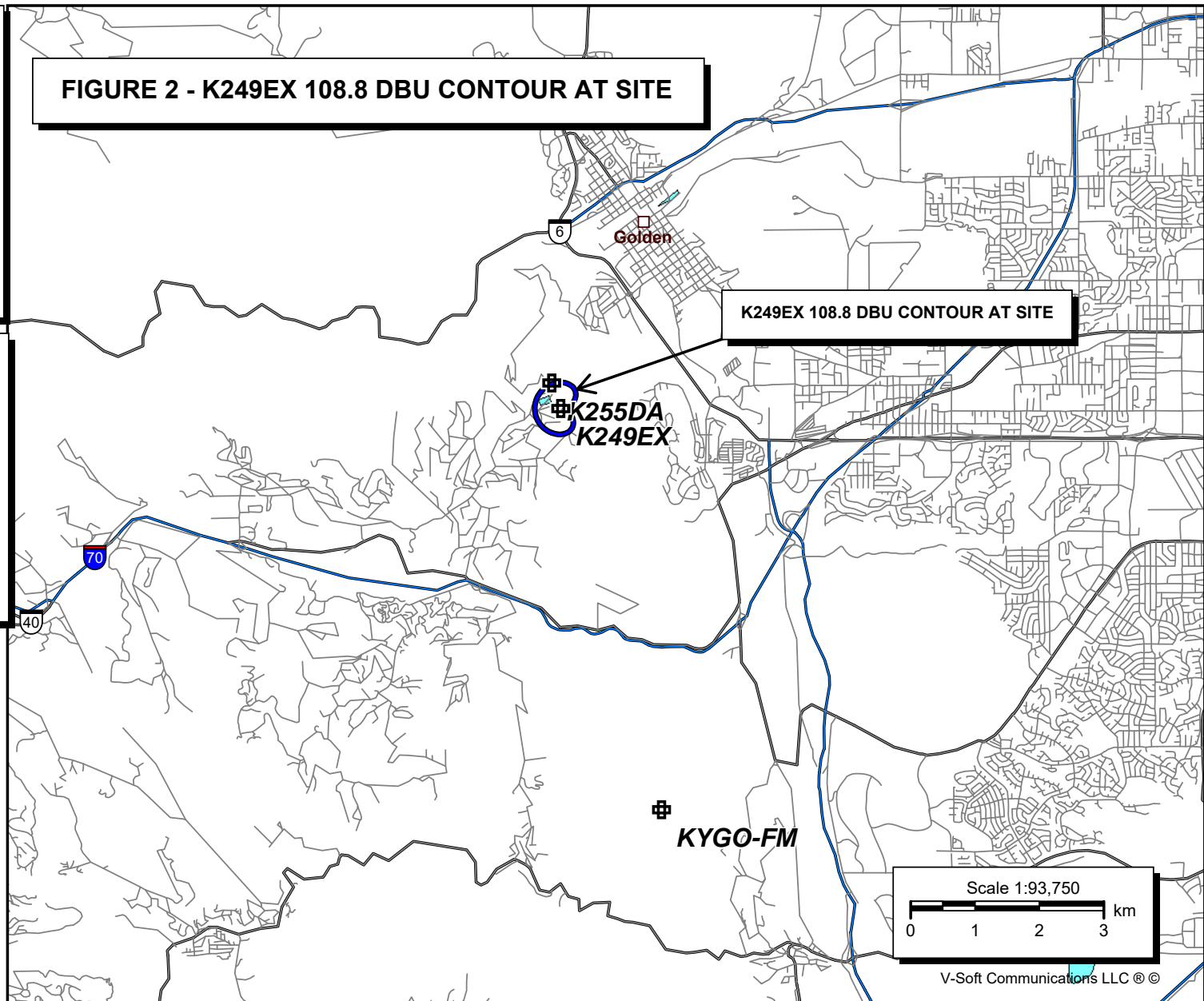
K251CV Golden, CO

Latitude: 39-43-59 N
Longitude: 105-14-14 W
ERP: 0.25 kW
Channel: 251
Frequency: 98.1 MHz
AMSL Height: 2235.0 m
Elevation: 2197.734 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model:

K249EX Denver, CO

0000086444
Latitude: 39-43-46.14 N
Longitude: 105-14-08.14 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

FIGURE 2 - K249EX 108.8 DBU CONTOUR AT SITE



K251CV Golden, CO

Latitude: 39-43-59 N
Longitude: 105-14-14 W
ERP: 0.25 kW
Channel: 251
Frequency: 98.1 MHz
AMSL Height: 2235.0 m
Elevation: 2197.734 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model:

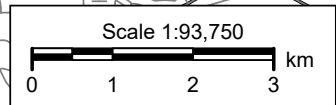
KYGO-FM Denver, CO
BLH20180912ABA
Latitude: 39-40-24.34 N
Longitude: 105-13-02.54 W
ERP: 100.00 kW
Channel: 253
Frequency: 98.5 MHz
AMSL Height: 2364.0 m
Elevation: 2345.0 m
Horiz. Pattern: Directional
Vert. Pattern: No
Prop Model:

FIGURE 3 - KYGO-FM 103.0 DBU CONTOUR AT SITE

KYGO 103.0 DBU AT SITE

K255DA

KYGO-FM



V-Soft Communications LLC ©

FIGURE 4 - PREDICTED 143 DBU INTERFERENCE CONTOUR
K251CV Golden, CO, Ch. 251D

Coverage Study - GLOBE 30 Sec
05-27-2023

K251CV CH251 D , 0.25 kW, 185.8m HAAT, 2235.0m COR AMSL
Interference Contour = 143 dBu. Population = 0

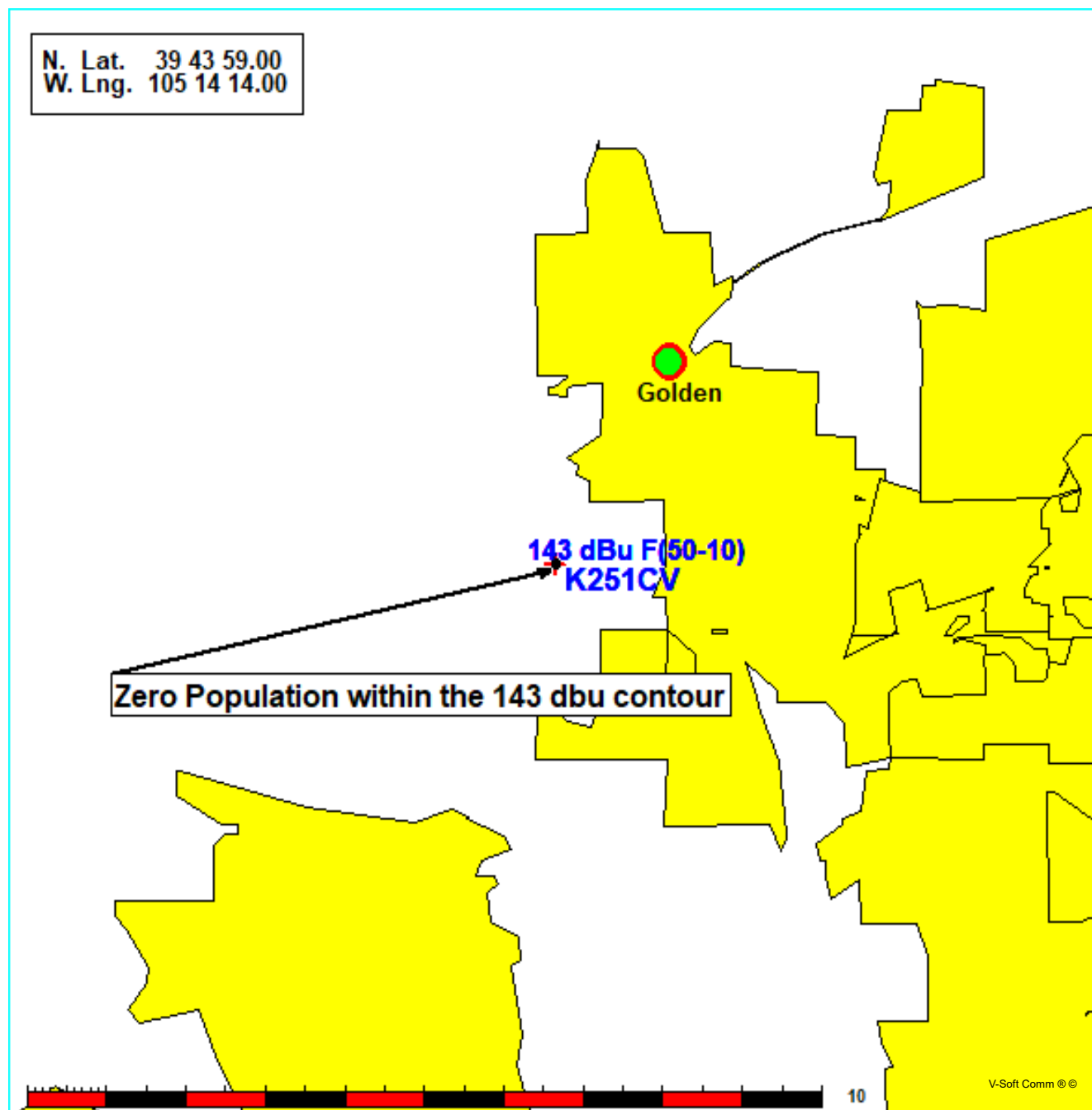


FIGURE 5 - VERTICAL PATTERN STUDY

K251CV Golden, CO, Showing Protection to KYGO-FM , Channel: 253
 Geographic Coordinates: N. 39 43 59.00 W. 105 14 14.00
 74.1204(d) Study - Using NGDC 30 SEC Terrain Database
 Translator or LPFM Maximum Licensed ERP = 0.25 kW, Channel: 251
 Translator or LPFM Antenna Height AG = 13 meters
 K251CV Antenna Azimuth Model = Vertical Model Name = Nicom BKG1P and BLK5

Protected Station's Contour = 102.9279 dBu
 Translator's or LPFM's full Interference contour 142.9279

Review Azimuth = 0 Degrees True
 Horizontal Relative Field at Review Azimuth = 0.100
 Translator/LPFM ERP on the horizontal at Review Azimuth = 0.003 kW
 Distance between stations = 6.8 km
 Protected Station= KYGO-FM, 100 kW, 2364 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 | 0.1 | 0.0250 | 002.5037 | 002.5037 | 013.000 |
| 05.00 | 0.99 | 0.1 | 0.0245 | 002.4786 | 002.4692 | 012.784 |
| 10.00 | 0.979 | 0.1 | 0.0240 | 002.4516 | 002.4143 | 012.574 |
| 15.00 | 0.953 | 0.1 | 0.0227 | 002.3847 | 002.3035 | 012.383 |
| 20.00 | 0.92 | 0.1 | 0.0212 | 002.3034 | 002.1645 | 012.212 |
| 25.00 | 0.877 | 0.1 | 0.0192 | 002.1950 | 001.9893 | 012.072 |
| 30.00 | 0.829 | 0.1 | 0.0172 | 002.0760 | 001.7979 | 011.962 |
| 35.00 | 0.772 | 0.1 | 0.0149 | 001.9321 | 001.5827 | 011.892 |
| 40.00 | 0.715 | 0.1 | 0.0128 | 001.7901 | 001.3713 | 011.849 <lowest Point |
| 45.00 | 0.647 | 0.1 | 0.0105 | 001.6191 | 001.1449 | 011.855 |
| 50.00 | 0.57 | 0.1 | 0.0081 | 001.4271 | 000.9173 | 011.907 |
| 55.00 | 0.487 | 0.1 | 0.0059 | 001.2185 | 000.6989 | 012.002 |
| 60.00 | 0.388 | 0.1 | 0.0038 | 000.9722 | 000.4861 | 012.158 |
| 65.00 | 0.292 | 0.1 | 0.0021 | 000.7303 | 000.3086 | 012.338 |
| 70.00 | 0.187 | 0.1 | 0.0009 | 000.4674 | 000.1599 | 012.561 |
| 75.00 | 0.095 | 0.1 | 0.0002 | 000.2378 | 000.0616 | 012.770 |
| 80.00 | 0.045 | 0.1 | 0.0001 | 000.1127 | 000.0196 | 012.889 |
| 85.00 | 0.032 | 0.1 | 0.0000 | 000.0794 | 000.0069 | 012.921 |
| 90.00 | 0.03 | 0.1 | 0.0000 | 000.0751 | 000.0000 | 012.925 |

FIGURE 6 - Directional Antenna Data

K251CV Golden, CO CH. 251D

05-27-2023

RMS(V)= .718

Graph is Relative Field

| Azi | Field | dbk | kw |
|-----|-------|---------|-------|
| 000 | 0.400 | -13.979 | 0.040 |
| 010 | 0.190 | -20.446 | 0.009 |
| 020 | 0.240 | -18.416 | 0.014 |
| 030 | 0.560 | -11.057 | 0.078 |
| 040 | 0.825 | -07.692 | 0.170 |
| 050 | 1.000 | -06.021 | 0.250 |
| 060 | 1.000 | -06.021 | 0.250 |
| 070 | 1.000 | -06.021 | 0.250 |
| 080 | 0.825 | -07.692 | 0.170 |
| 090 | 0.560 | -11.057 | 0.078 |
| 100 | 0.155 | -22.214 | 0.006 |
| 110 | 0.060 | -30.458 | 0.001 |
| 120 | 0.055 | -31.213 | 0.001 |
| 130 | 0.045 | -32.956 | 0.001 |
| 140 | 0.035 | -35.139 | 0.000 |
| 150 | 0.030 | -36.478 | 0.000 |
| 160 | 0.040 | -33.979 | 0.000 |
| 170 | 0.070 | -29.119 | 0.001 |
| 180 | 0.200 | -20.000 | 0.010 |
| 190 | 0.350 | -15.139 | 0.031 |
| 200 | 0.500 | -12.041 | 0.063 |
| 210 | 0.650 | -09.762 | 0.106 |
| 220 | 0.825 | -07.692 | 0.170 |
| 230 | 0.950 | -06.466 | 0.226 |
| 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 | 0.950 | -06.466 | 0.226 |
| 340 | 0.825 | -07.692 | 0.170 |
| 350 | 0.650 | -09.762 | 0.106 |

Nicom BKG-1P slant 45 Oriented
at 280 degrees and Nicom BKY3P
slant 45 Oriented 60
degrees with 75/25
power divider

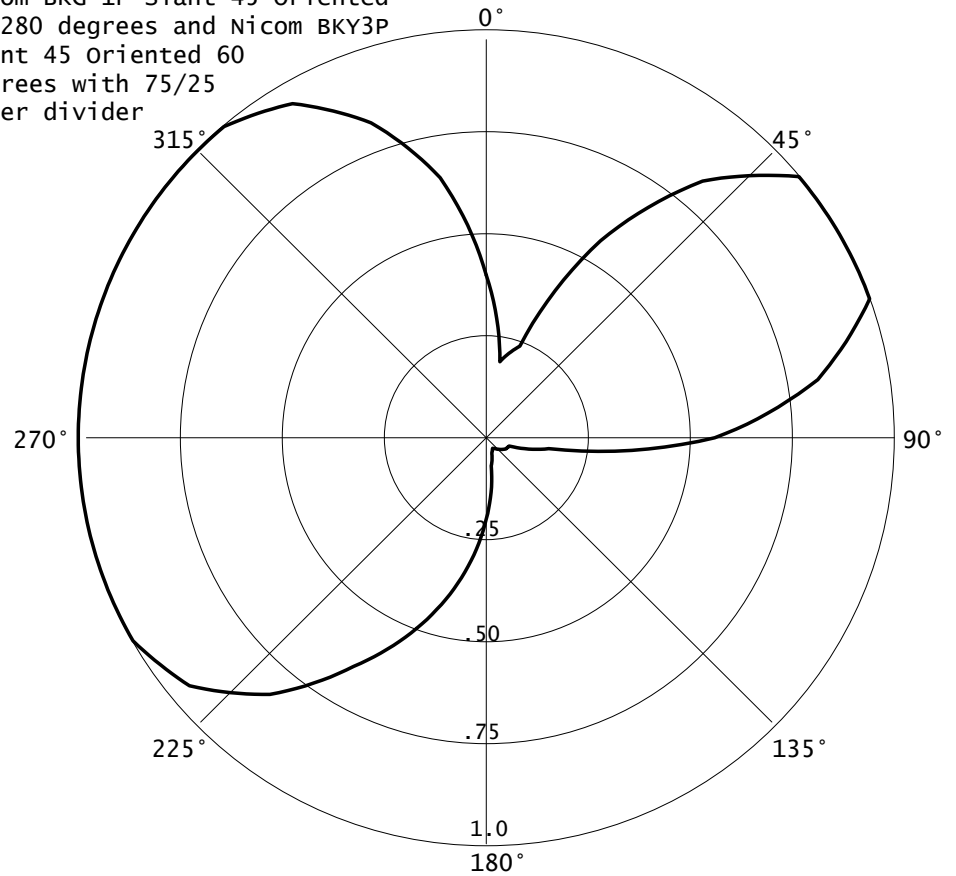


FIGURE 7 - FILL-IN MAP WITH KQKS(FM)
K251CV Golden, CO, Ch. 251D

Coverage Study - GLOBE 30 Sec
05-27-2023

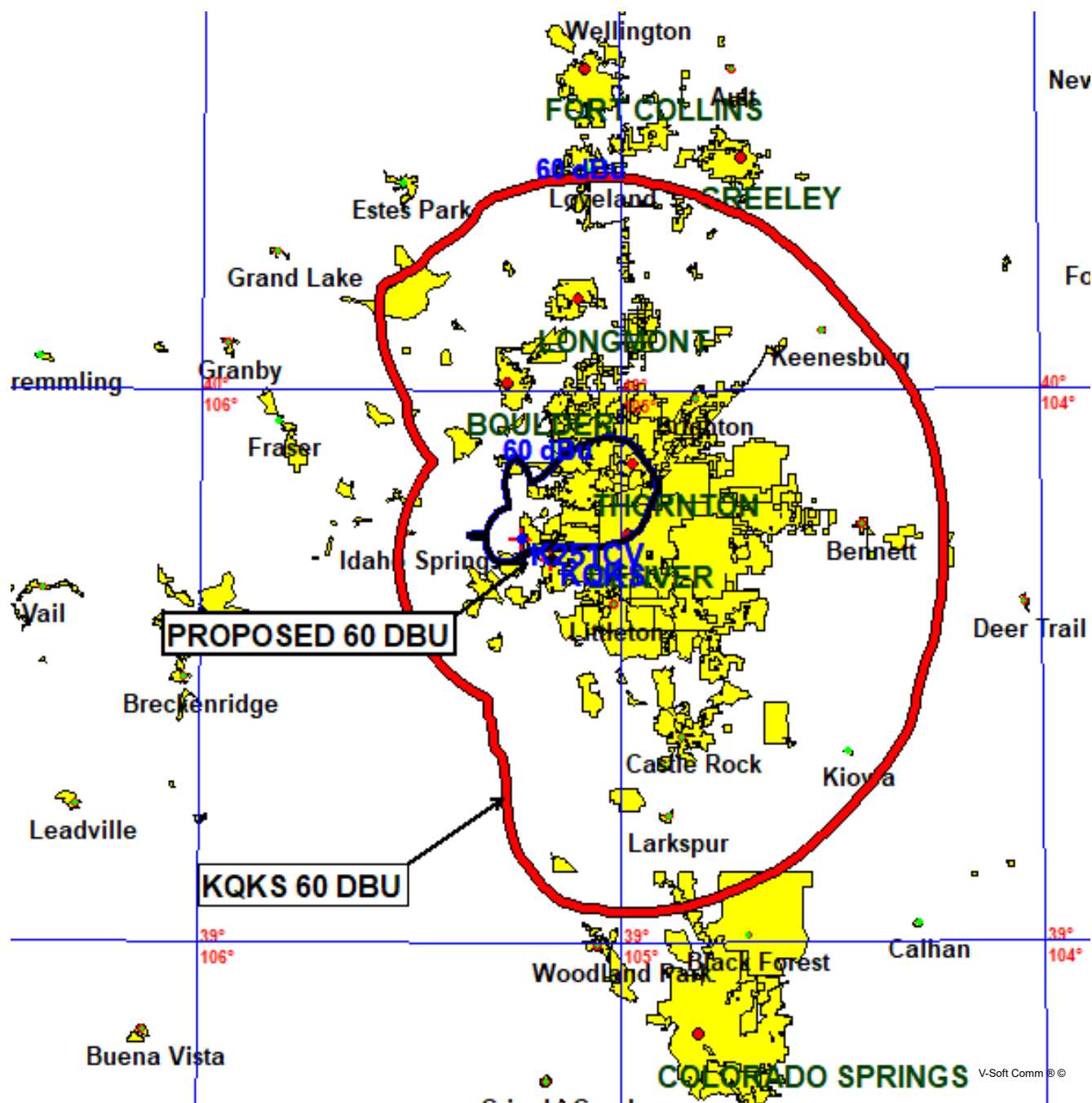


FIGURE 8 - DETAILED INTERFERENCE STUDY WITH KKFM(FM)
Mountain Community Translator

FMCommander Single Allocation Study - 05-28-2023 - GLOBE 30 Sec
K251CV's Overlaps (In= -92.6 km, Out= 5.79 km)

K251CV CH 251 D DA
Lat= 39 43 59.00, Lng= 105 14 14.00
0.25 kW 0 m HAAT, 2235 m COR
Prot.= 60 dBu, Intef.= 40 dBu

KKFM CH 251 C BLH19940321KC
Lat= 38 44 35.90, Lng= 104 51 45.90
71.0 kW 698 m HAAT, 2949 m COR
Prot.= 60 dBu, Intef.= 40 dBu

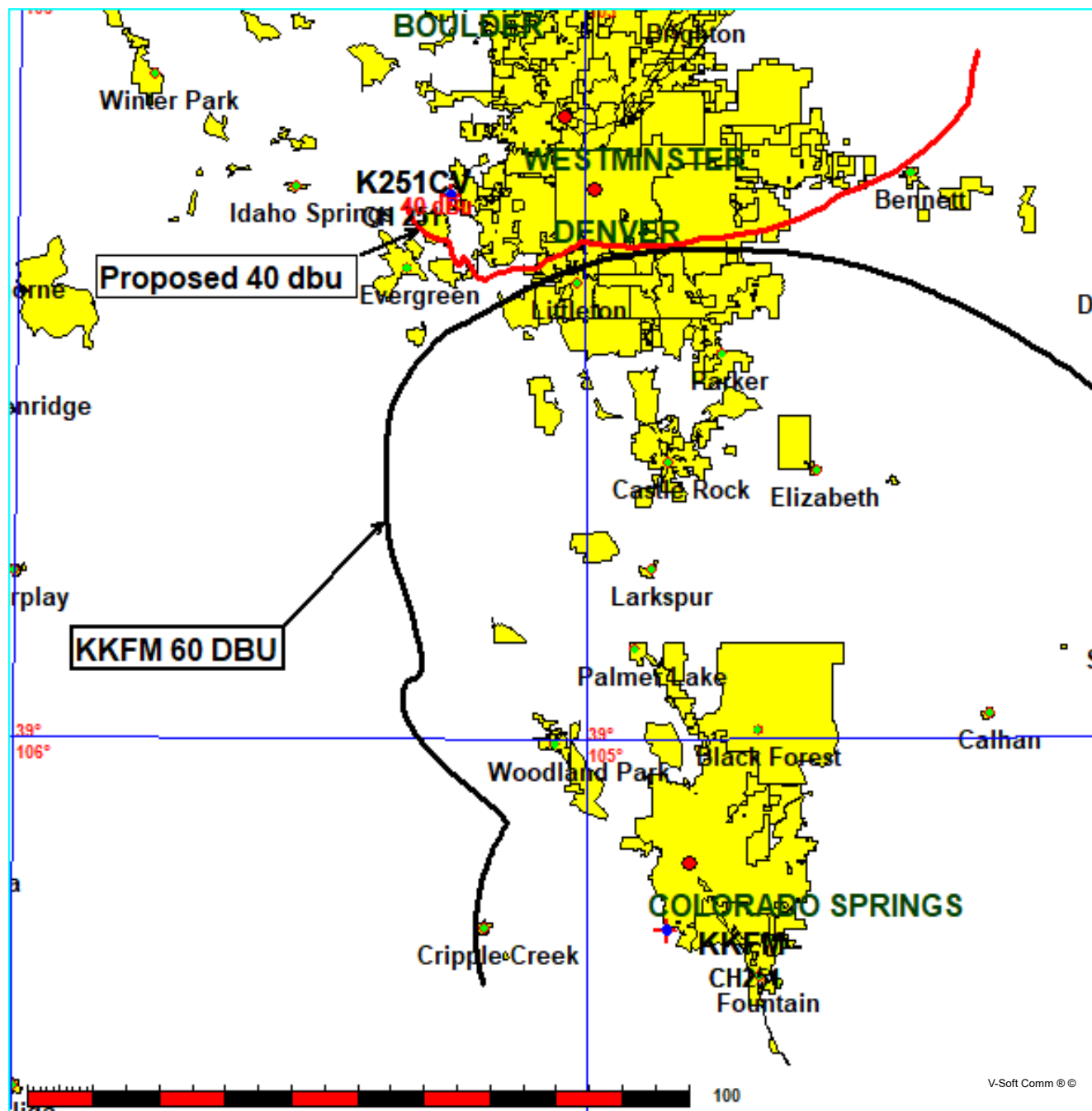


FIGURE 9 - DETAILED INTERFERENCE STUDY WITH K251AB
Mountain Community Translator

FMCommander Single Allocation Study - 05-28-2023 - GLOBE 30 Sec
K251CV's Overlaps (In= 6.11 km, Out= 7.25 km)

K251CV CH 251 D DA
Lat= 39 43 59.00, Lng= 105 14 14.00
0.25 kW 0 m HAAT, 2235 m COR
Prot.= 60 dBu, Intef.= 40 dBu

K251AB CH 251 D DA BLFT19920831TD
Lat= 40 14 23.90, Lng= 105 03 20.90
0.25 kW 77 m HAAT, 1615 m COR
Prot.= 60 dBu, Intef.= 40 dBu

