

SUPPLEMENTAL INTERFERENCE STUDY
K242CI CASPER, WY
MOUNTAIN COMMUNITY TRANSLATORS, LLC
MINOR CHANGE APPLICATION
JULY 2022

This supplemental interference study is being provided per a staff inquiry seeking additional information regarding current interference being caused by KRNK(FM) Casper, Wyoming operating on channel 244C2, facility ID 200635 to K242CI Casper, Wyoming on second adjacent channel 242D.

K242CI is seeking to change its channel of operation from channel 242 to 258. This change will allow K242CI to operate basically interference free from any same, or pertinent 1st 2nd or 3rd adjacent channels.

While K242CI was licensed to operate via waiver of the commission rules on a second adjacent channel to KRNK(FM) by demonstrating a lack of prohibitive interference to KRNK in populated areas. K242CI does receive incoming interference from KRNK in populated areas. FM translators are not normally protected from such interference. However, as will be documented, a channel change from 242 to 258 will allow K242CI to benefit from greater interference free coverage to its listeners.

Figure 1 documents a Longley-Rice coverage map showing the areas where KRNK's predicted signal exceeds the predicted coverage of K242CI by more than 20 dBμ. KRNK transmits from a nearby tower site to the K242CI transmitter site at the same Casper Mountain Communications site. KRNK operates with 2.7 KW Effective Radiated Power ("ERP") with similar antenna heights of K242CI. K242CI operates with only 0.01 KW ERP (10 watts). Thus, KRNK operates with 270 times (24.3 dB) the ERP of K242CI with similar transmitter antenna facilities. While many newer digital receivers have enough adjacent channel selectivity to

receive K242CI adequately, there are still many non-digital older, lower quality receivers that don't have enough adjacent channel selectivity and/or have "Automatic Frequency Control" or AFC that will lock onto the stronger FM signal only being two channels removed. Full power FM stations are protected for this reason from 2nd and 3rd adjacent channel interference.

Figure 3 is a contour study between KRNK and K242CI which shows the overlap of the 100 dBμ interference contour of KRNK with the 60 dBμ normally protected contour of K242CI. Figure 2 documents the population located within these areas of interference. For example, in Natrona County, or the County where the city of license is located for K242CI, the KRNK field strength is greater than 20 dBμ in areas containing 30,089 persons. Figure 4 shows the predicted 100 dBμ interference contour for KRNK located entirely within the 60 dBμ of K242CI. There are 215 persons located within this interference contour of KRNK. Thus, that while it has been documented previously that K242CI doesn't not cover any population within its interference contour towards KRNK, K242CI does receive normally prohibitive interference from KRNK.

It should also be noted that this FCC application is fully compliant with Section 74.1204(a) of the FCC Rules such that no new interference will be caused to any pertinent co-channel and adjacent channel facilities or proposed facilities. This application proposes a 60 dBu (1 mV/m) coverage contour that overlaps all of the currently licensed K242CI 60 dBu (1 mV/m) licensed coverage contour, thus adhering to the requirement in Section 74.1233(a)(1)(ii) to be considered a Minor Modification application. As such, because the requested channel change will mitigate interference at the current existing frequency and will not cause any new interference at the new frequency, this application may be considered a Minor Modification in accordance with Section 74.1233(a)(1) (i)(B) of the FCC Rules.

K242CI respectfully requests that it be allowed to change its channel of operation from channel 242 to 258 to provide increased interference free coverage.

K242CI

BLFT20160412ACZ
Latitude: 42-44-26.80 N
Longitude: 106-18-24 W
ERP: 0.01 kW
Channel: 242
Frequency: 96.3 MHz
AMSL Height: 2466.0 m
Elevation: 2458.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 311.0
Receiver Ht AG: 9.1 m
Receiver Gain: 0 dB
Time Variability: 50.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast

KRNK

BLH20110804ABG
Latitude: 42-44-36.90 N
Longitude: 106-18-26.10 W
ERP: 2.70 kW
Channel: 244
Frequency: 96.7 MHz
AMSL Height: 2524.0 m
Elevation: 2445.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: Longley/Rice
Climate: Cont temperate
Conductivity: 0.0050
Dielec Const: 15.0
Refractivity: 311.0
Receiver Ht AG: 9.1 m
Receiver Gain: 0 dB
Time Variability: 10.0%
Sit. Variability: 50.0%
ITM Mode: Broadcast

**FIGURE 1 - COVERAGE AREA SHOWING KRNK(FM) WITH 20 DBU
GREATER SIGNAL THEN K242CI**

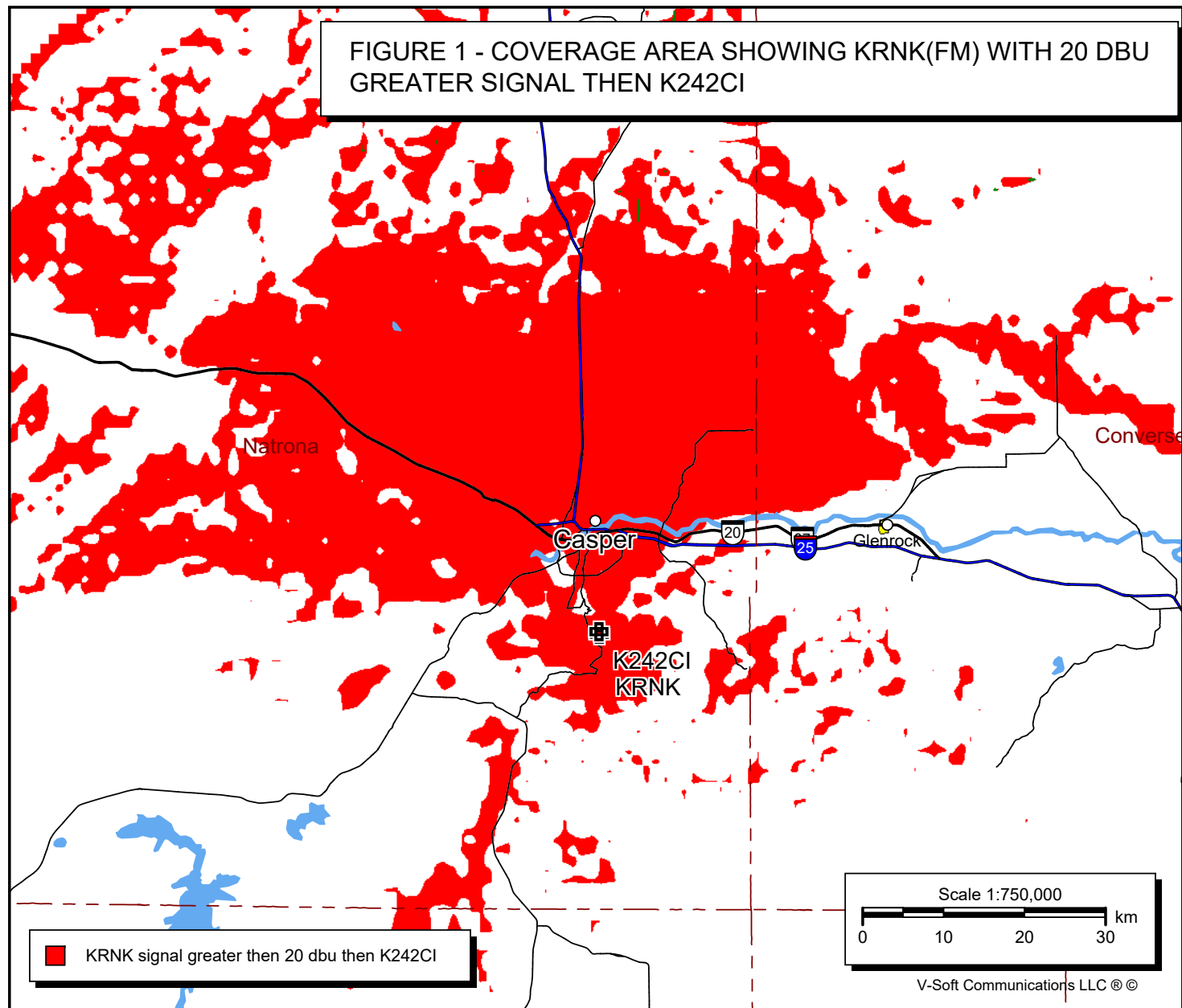


FIGURE 2 - D/U Ratio Study

Signal Resolution: 1.25 km

Study Date: 7/7/2022

Population Database: 2010 US Census (PL)

Reference Station:

K242CI (242) Casper, WY BLFT20160412ACZ

0.01 kW - ND - 2466 m AMSL

Settings:

Threshold for Reception: 40.0 dBu

Front-To-Back Ratio: 0.0 dB

Using Signal Interpolation: No

Interfering:

Call Letters	City	State	Dist	Bear
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KRNK (244)	Casper	WY	0.3	351.3

D/U Ratio (dB)	Housing Units	Population	%
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< 0.0	30,209	68,003	100.00
< -10.0	30,209	68,003	100.00
< -20.0	30,209	68,003	100.00
Coverage	30,209	68,003	

D/U Ratio (dB)	Area (sq. km)	%
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< 0.0	5934.82	100.00
< -10.0	5934.82	100.00
< -20.0	5898.65	99.39
Coverage	5934.82	

"Coverage" indicates the area under study where the field strength is greater than 40.0 dBu.

	Housing Units	Population

Wyoming		
Carbon County		
Total	8,576	15,885
< 0.0	2	0
< -10.0	2	0
< -20.0	2	0
Converse County		

Total	6,403	13,833
< 0.0	118	276
< -10.0	118	276
< -20.0	118	276
Johnson County		
Total	4,553	8,569
< 0.0	0	0
< -10.0	0	0
< -20.0	0	0
Natrona County		
Total	33,807	75,450
< 0.0	30,089	67,727
< -10.0	30,089	67,727
< -20.0	30,089	67,727

FIGURE 3 - KRNK(FM) INTERFERENCE CONTOUR WITH K242CI
K242CI CASPER, WY, CH. 242D

FMCommander Single Allocation Study - 07-07-2022 - GLOBE 30 Sec
KRNK's Overlaps (In= -33.43 km, Out= -18.13 km)

KR NK CH 244 C2 73.215 N
Lat= 42 44 36.90, Lng= 106 18 26.10
2.7 kW 579.9 m HAAT, 2524 m COR
Prot.= 60 dBu, Intef.= 100 dBu

K242CI CH 242 D BLFT20160412ACZ
Lat= 42 44 26.80, Lng= 106 18 24.00
0.01 kW 0 m HAAT, 2466 m COR
Prot.= 60 dBu, Intef.= 100 dBu

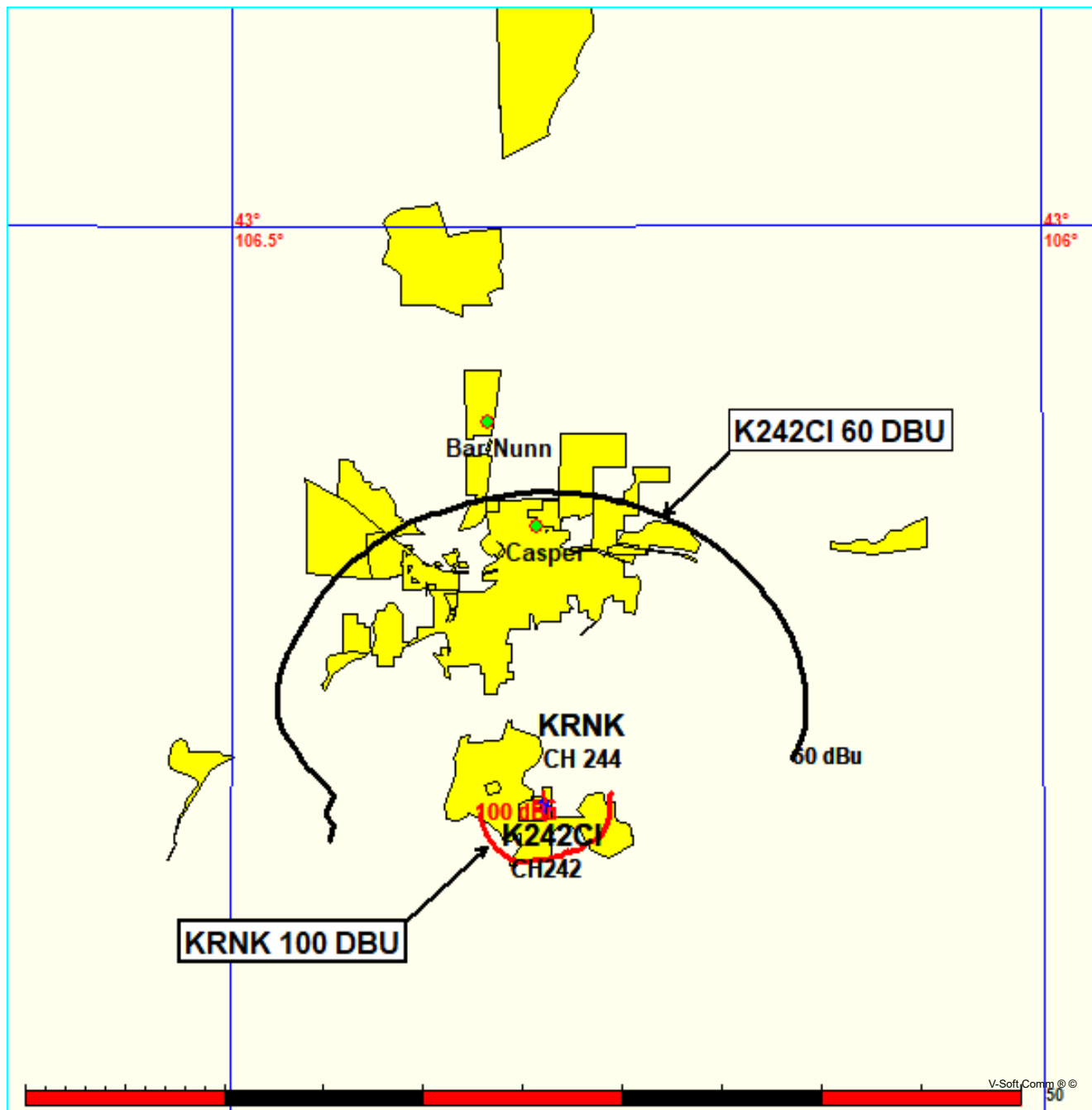


FIGURE 4 - KRNK PREDICTED 100 DBU CONTOUR
K242CI CASPER, WY, CH. 242D

Coverage Study - GLOBE 30 Sec
07-07-2022

KR NK CH244 C2, 2.7 kW, 579.9m HAAT, 2524.0m COR AMSL
Service Contour = 100 dBu. Population = 215

