

Technical Report K240DW Minor Modification

This technical report is submitted for a minor modification to K240DW at Sheridan, WY, FCC file no. BLFT-20081028ABR. A change in tower site is requested. The translator will continue to serve as a fill-in to rebroadcast the primary KYTI(FM) 229C facility at Sheridan, WY, FCC facility I.D. 12931.

K240DW Modification Analysis:

An overlap study (exhibit E-1) shows the K240DW modification is located within the third adjacent KLGT(FM) 243C1 protected contour at Buffalo, WY, FCC facility I.D. 12698. As a result, the interference ratio is utilized to determine the interfering contour in accordance with FCC 02-244, paragraph 12.

The F(50-50) contour from KLGT(FM) to the K240DW tower site was calculated to be 68.211 dBu using the Probe3 software and 30 second FCC terrain data. Adding the +40 third adjacent F(50-10) interfering contour is 108.211 dBu shown in a plot (exhibit E-2) and an aerial photo (exhibit E-3). There are no major roads, population or buildings within the interfering contour where the K240DW signal would reach any potential listeners. Therefore, a waiver of CFR §74.1204 is requested for this facility, in accordance with *Living Way Ministries, Inc.* FCC no. 08-242.

Antenna System:

K240DW will be located on an existing 12 meter tower at coordinates:

44 37 24N 107 07 01W NAD 27.

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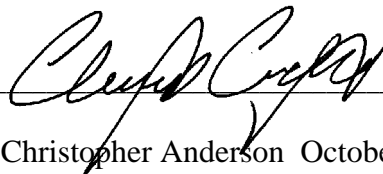
The current Shively 6812B two bay, half-wavelength nondirectional antenna will be mounted at a COR AGL of 8 meters, 2349 meters AMSL (354 meter HAAT, 12 radial 30 second FCC terrain data), and operate at an ERP of 0.250 kW. The 60 dBu F(50-50) contour overlaps the licensed K240DW 60 dBu contour and is contained within the primary KYTI(FM) 60 dBu contour (exhibit E-4).

RF Exposure Calculation:

The RF contribution was calculated using the Commission's FMMODEL program. The two bay half-wavelength Shively antenna at a COR AGL of 8 meters and 0.250 kW ERP results in an RF of $39.13 \mu\text{W}/\text{cm}^2$ at a distance of 11 meters from the base of the tower which is below 5% of the $1000 \mu\text{W}/\text{cm}^2$ maximum permissible for occupational/controlled exposure, allowing exclusion from consideration. It is noted from the aerial photo the tower site is located on an isolated mountaintop with limited access with several other facilities.

Conclusion:

It is concluded that the K240DW modification complies with all Commission rules and policies.



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E-1 K240DW Overlap Study

REFERENCE		CH# 240D - 95.9 MHz, Pwr= 0.25 kW, HAAT= 354.0 M, COR= 2349 M						DISPLAY DATES			
44 37 24.0 N.		Average Protected F(50-50)= 24.4 km						DATA 10-23-12			
107 07 01.0 W.		Omni-directional						SEARCH 10-23-12			

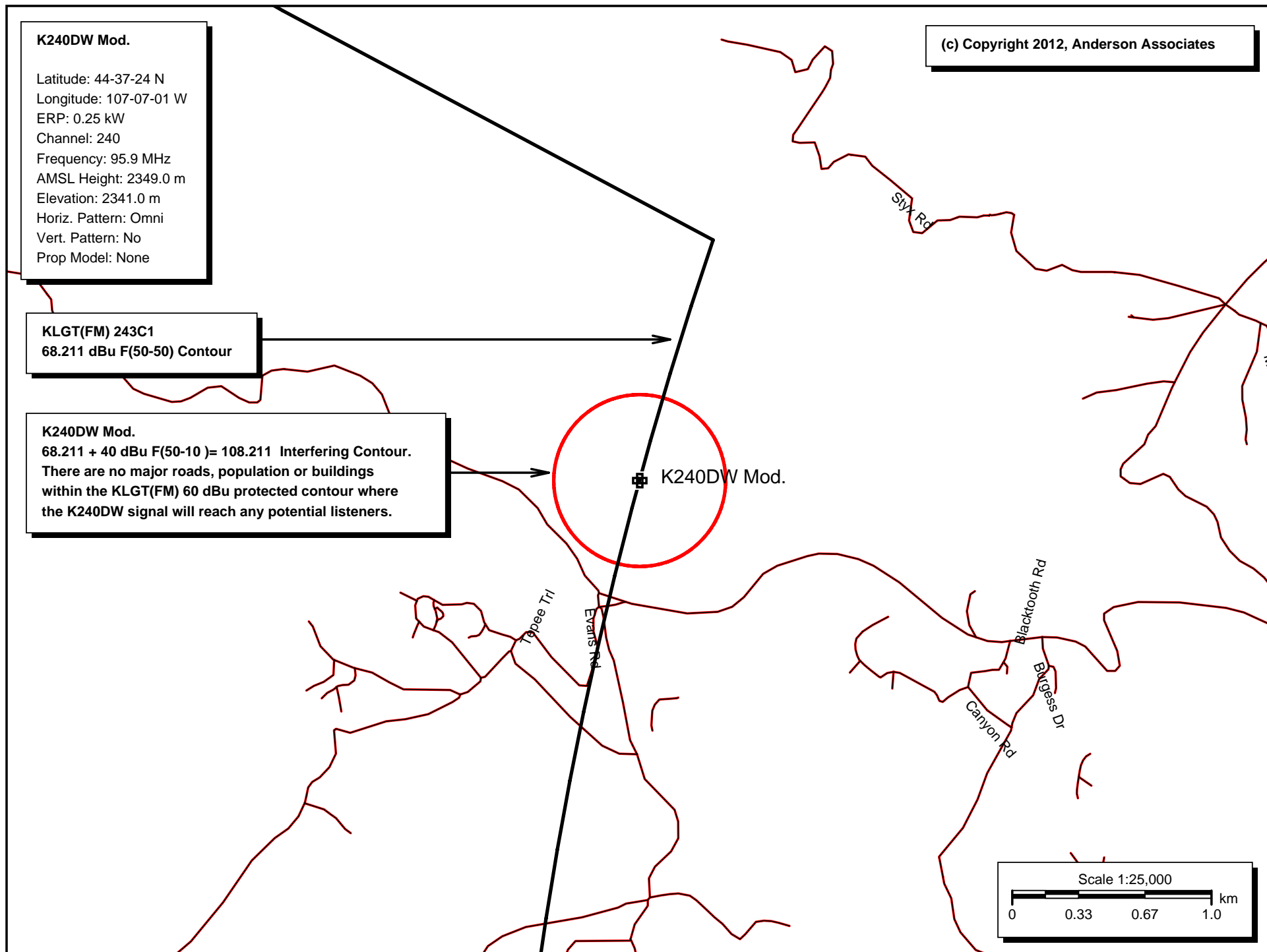
CH	CALL	TYPE	ANT	AZI.	DIST	LAT.	Pwr(kW)	INT(km)	PRO(km)	*IN*	*OUT*
CITY			STATE	<--	FILE #	LNG.	HAAT(M)	COR(M)	LICENSEE	(Overlap in km)	

240D	K240DW	LIC	C	144.7	0.15	44 37 20.0	0.250	93.2	32.6	-102.8*	-65.1*
Sheridan			WY	324.7	BLFT20081028ABR	107 06 57.0	358	2357	Lovcom, Inc.		
243C1	KLGT	LIC	CX	105.3	20.10	44 34 31.9	100.000	3.2	31.0	-15.7*	-12.0*(1)
Buffalo			WY	285.5	BLH20120106AAJ	106 52 21.7	101	1697	Legend Communications Of W		
241C1	KKLX	LIC	CX	223.3	85.89	44 03 33.6	63.000	80.8	53.7	-2.0	21.7
Worland			WY	42.8	BLH20120221ABM	107 51 12.7	176	1491	Legend Communications Of W		
243D	KLGT-FM1	LIC	C	134.4	43.82	44 20 50.0	0.360	1.3	7.8	19.1	32.3
Buffalo			WY	314.7	BLFTB20110216ACA	106 43 25.0		1541	Legend Communications Of W		
240C	KZZI	LIC	C	96.1	263.20	44 19 35.0	100.000	192.4	87.7	31.4	72.4
Belle Fourche			SD	278.4	BLH20000112ABG	103 50 06.0	545	2262	Western South Dakota Broad		
238C0	KCHH	LIC	CX	327.6	147.94	45 44 29.0	100.000	10.3	72.9	99.2	74.1
Worden			MT	146.9	BLH20080807ABL	108 08 19.0	300	1392	Townsquare Media Billings		
239L1	KCOV-LP	LIC		105.7	133.55	44 17 15.0	0.100	8.0	5.6	88.4	75.6
Gillette			WY	286.8	BLL20091013ACW	105 30 21.0	29	1436	First Presbyterian Church		

Terrain database is FCC 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 protected contour.

(1) K240DW is currently located within the third adjacent KLGT(FM) 243C1 60 dBu protected contour. The translator relocation to a new tower site will not produce any interfering signal to any population, roads or buildings as shown in the attached exhibits.

E-2 K240DW Interference Contour Within KLGT(FM) 243C1 Plot



E-3 K240DW Interference Contour Aerial Photo

K240DW Mod.

44 37 24N NAD27
107 07 01W

108.211 dBu F(50-10) interfering contour within the third adjacent KLGT(FM) 243C1 60 dBu protected contour. There are no major roads, population or buildings where the interfering signal will reach any potential listeners. The structures shown are transmitter buildings.



Google earth

feet | 3000
km | 1



E-4 K240DW 60 dBu Contour Plot

