

**WESTERN OREGON RADIO CLUB, INC.  
MINOR CHANGE TO LICENSED FACILITY  
KISN-LP 95.1 FM PORTLAND, ORE  
FAC ID 195134**

**PARAMETERS**

Channel	236
New Location:	45° 27' 47" N 122° 42' 6.5" W -- NAD 83
Antenna AGL	20 m
Tower Height	30.8 m (structural support)
Total Structure	30.8 m
Type:	Monopole Self Support
Antenna Ground	141 m
Antenna COR	161 m
HAAT	42 m (see Figure 1)
Power	52 w (see Figure 2)
Application	Minor Change (see Figure 3)
ASR	N/A

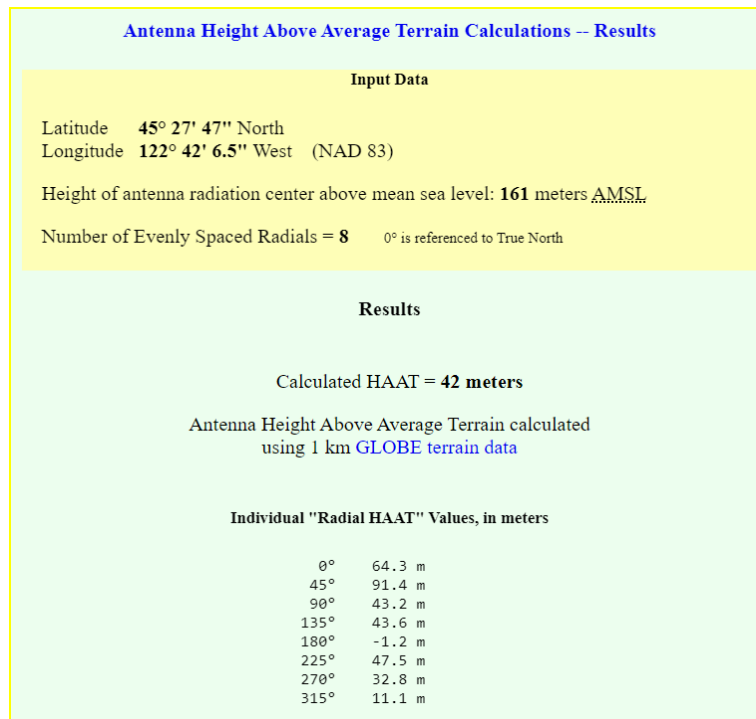


Figure 1: FCC HAAT Calculation from FCC website

Select Contour Type: F(50,50) Service Contour – FM and NTSC (analog) TV  
F(50,10) Interfering Contour  
F(50,90) Digital TV Service Contour

Select Channel Range: (not TV Virtual Channel) FM Radio or TV Transmit Channels 2-6  
TV Transmit Channels 7-13  
TV Transmit Channels 14-69

Find This: Field Strength, given a Distance (in km)  
Distance, Given a Field Strength (in dBu)  
FM ERP, given Distance and Field Strength [F(50,50) Service Contour]

1  
ERP (kW)

5.64  
Distance (km)

42  
HAAT (meters)

60  
Field (dBu)

Results:

Calculated ERP (rounded per Section 73.212) = **0.052 kW**  
(FM 60 dBu Service Contour only)

Unrounded ERP = 0.052049 kW

Figure 2: FCC Power Calculation per FCC Website

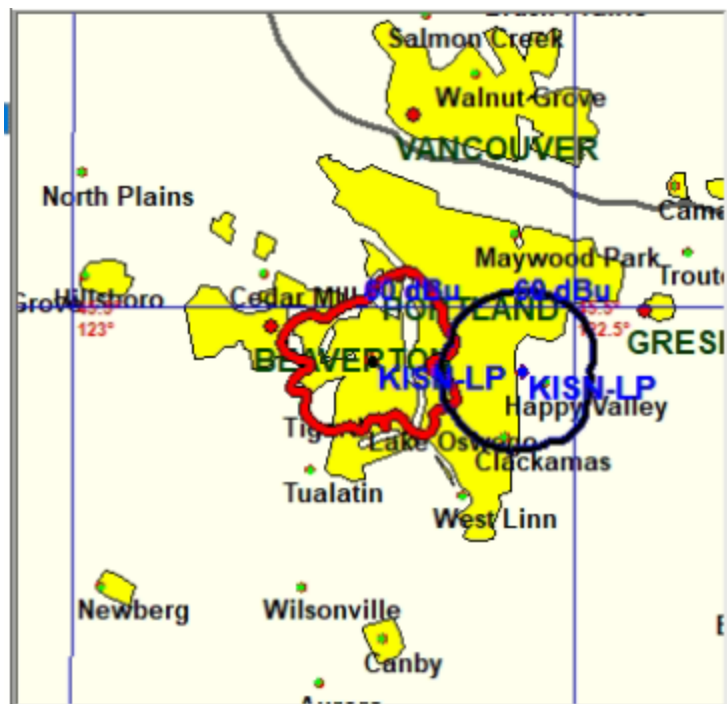


Figure 3: FCC 60 dBu F(50,50), Red Current, Black Proposed Meeting Criteria for Minor Change Move (proposed and licensed 60 dBu contours overlap)

## SPACING

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                                Western Oregon Radio Club, Inc
REFERENCE
45 27 16.40 N.                  CLASS = L1
122 33 04.30 W.                Current  Spacings to 2nd Adj.
----- Channel 236 - 95.1 MHz -----
DISPLAY DATES
DATA 05-27-22
SEARCH 06-05-22

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Call	Channel	Location		Azi	Dist	FCC	Margin
*KBFF	LIC	238C0	Portland	OR	288.7	11.91	83.5 -71.6
*KNRK	LIC-Z	234C2	Camas	WA	288.7	11.91	52.5 -40.6
KISN-LP	LIC	236L1	Portland	OR	0.0	0.00	23.5 -23.5
NEW	CP	236C3	Odell	OR	74.2	87.39	77.5 9.9
KSND	LIC	236C3	Monmouth	OR	233.2	104.23	77.5 26.7
AU9861581VAC		236A	Trout Lake	WA	48.7	101.56	66.5 35.1
AL11255	ALO	236A	Trout Lake	WA	48.7	101.56	66.5 35.1
K235CU	LIC	235D	Longview	WA	336.7	72.08	20.5 51.6
KBGE	LIC-N	235C3	Cannon Beach	OR	297.7	121.36	66.5 54.9
KITI-FM	LIC-N	236A	Winlock	WA	343.5	126.34	66.5 59.8
KZAS-LP	LIC	236L1	Hood River	OR	70.5	84.80	23.5 61.3

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Reference station has protected zone issue: Canada- AM tower
All separation margins include rounding
* See second adjacent waiver request

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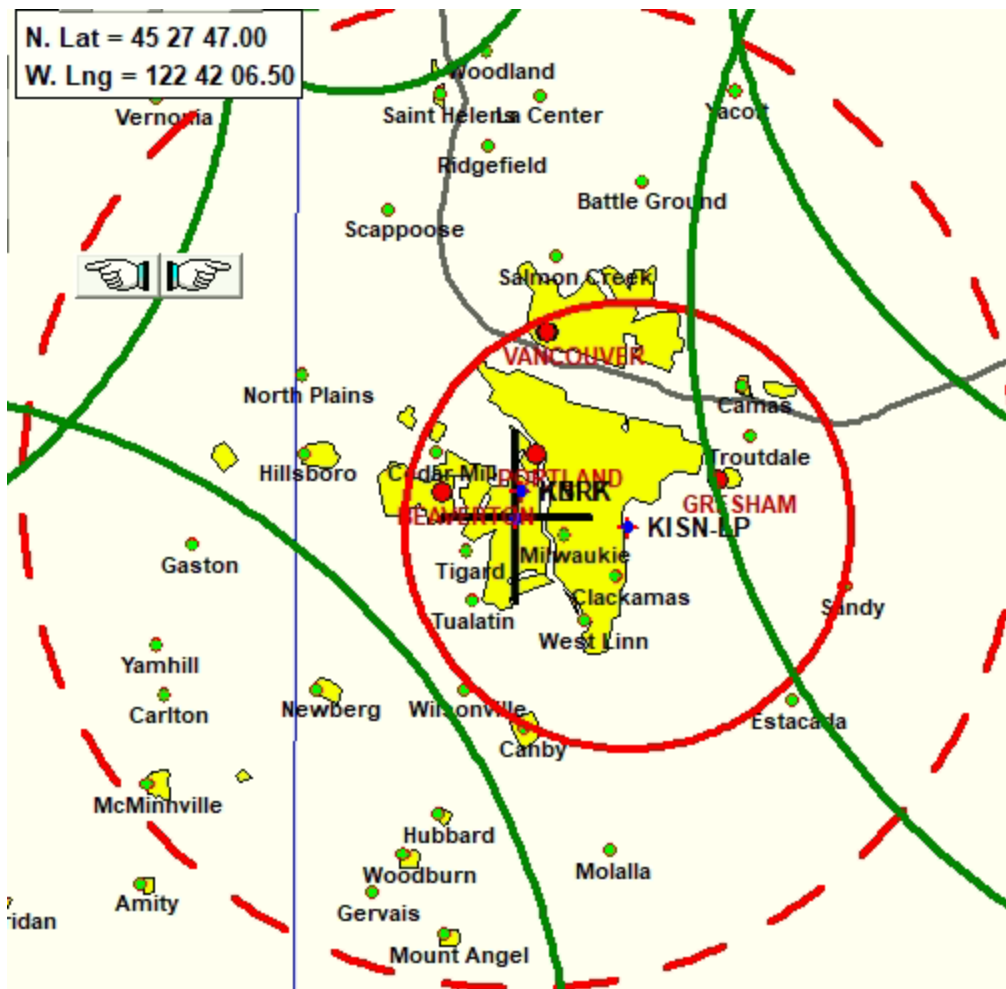


Figure 4: Spacing

## TOWAIR

DETERMINATION Results							
PASS SLOPE(25:1): NO FAA REQ-HELIPORT 7301.78 MTRS (7.30180 KM) AWAY							
Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
HELI	C	45-31-31.00N	122-40-15.00W	PORTLAND DOWNTOWN	MULTNOMAH PORTLAND, OR	23.8	24.399999999999999
Your Specifications							
NAD83 Coordinates							
Latitude						45-27-47.0 north	
Longitude						122-42-06.5 west	
Measurements (Meters)							
Overall Structure Height (AGL)						30.8	
Support Structure Height (AGL)						30.8	
Site Elevation (AMSL)						141	
Structure Type							
MTOWER - Monopole							

Figure 5: Towair Pass

## SECOND ADJACENT WAIVER REQUEST

License respectfully requests a "second adjacent channel waiver" with regards to Section 47 C.F.R. Section 73.807 of the FCC rules based upon the "Living Way" precedence (Living Way Ministries, Inc., Memorandum Opinion and Order, 17 FCC Red 17054, 17056, ¶ 5 (2002), recon. denied 23 FCC Red 15070 (2008)). This will be accomplished by using Free Space methodology of calculation.

Using U/D methodology, at the proposed KISN-LP transmitter location KBFF has a signal strength of 116.4 dBu and KNRK has a signal strength of 104.8 dBu. Interference will occur when the lesser signal strength (KNRK) interfering signal exceeds the desired signal by 40 dbu. So the area of predicted interference would then be bounded by the 144.8 dBu contour.

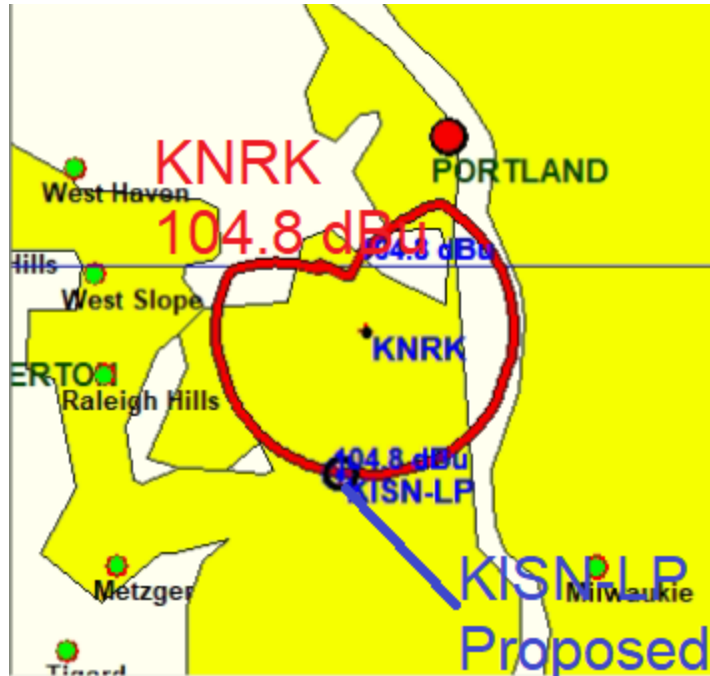


Figure 6: Fields strength at proposed site of second adjacent channel

The distance to this contour, using free space method:

$D = (7.01 \cdot P^{1/2}) / E$ , where P is power (watts), E is field strength (v/m), and D is distance to contour (meters):

$P = 52w$ ,  $E = 144.8 \text{ dBu}$   $D = 2.9 \text{ meters}$

The interference radius is 2.9 meters. The interference radius resides totally above ground on the tower.

Due to zero population within this radiation radius, this meets the "Living Way" Criteria to qualify for a Waiver of 47 C.F.R. Section 73.807.

## NON-IONIZING ELECTROMAGNETIC RADIATION

The OER program FM Model for Windows Vers 2.1 Beta was used to determine the maximum predicted RF exposure. A ring+stub antenna was used for modeling with one bay. The maximum predicted RF exposure for a human standing on the ground would be  $7.8 \mu\text{W}/\text{cm}^2$  at 4.4 m. This represents less than 5% of the FCC Maximum Permissible Exposure (MPE) of  $200 \mu\text{W}/\text{cm}^2$  for uncontrolled environments. 47 CFR 1.307(b)(3) exempts applicants from preparing an Environmental Assessment when the predicted exposure levels would be less than 5% of the FCC limits.

