

BENJAMIN F. DAWSON III, PE
THOMAS M. ECKELS, PE
STEPHEN S. LOCKWOOD, PE
DAVID J. PINION, PE

ERIK C. SWANSON, PE
THOMAS S. GORTON, PE
MICHAEL H. MEHIGAN, EIT

HATFIELD & DAWSON
CONSULTING ELECTRICAL ENGINEERS
9500 GREENWOOD AVE. N.
SEATTLE, WASHINGTON 98103

TELEPHONE (206) 783-9151
FACSIMILE (206) 789-9834
E-MAIL hatdaw@hatdaw.com

JAMES B. HATFIELD, PE
PAUL W. LEONARD, PE
CONSULTANTS

MAURY L. HATFIELD, PE
(1942-2009)

**Engineering Statement
Digital Flash Cut Application for K47CD
Channel 47 at Rockaway Beach, OR
March 2010**

This Engineering Statement has been prepared on behalf of Rural Oregon Wireless TV, Inc., licensee of TV translator station K47CD at Rockaway Beach, Oregon. This material has been prepared in connection with an application for digital flash cut.

I. Allocation Study

Study has been made of all cochannel and adjacent-channel facilities in the vicinity of the proposed operation, including a detailed Longley-Rice interference study to demonstrate that the proposed operation will not cause interference to any facilities with which contour overlap exists. This study was performed using the SunDTV program from V-Soft Communications and a 1 km grid spacing. The SunDTV program identically duplicates the FCC's OET-69 processing program.

The results of this study indicate that the proposed facility is predicted to cause zero additional interference to any of the listed stations.

Based on the foregoing allocation and interference study, it is believed that the proposed facility can operate without risk of interference to other stations.

Summary Study

Census data selected: 2000

Post DTV Transition Database Selected

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 03-26-2010 Time: 13:31:29

Record Selected for Analysis

K47CD USERRECORD-05 ROCKAWAY OR US
 Channel 47 ERP 0.975 kW HAAT 397. m RCAMSL 00493 m SIMPLE MASK
 Latitude 045-44-38 Longitude 0123-56-23
 Status APP Zone 2 Border
 Dir Antenna Make usr Model USRPAT05 Beam tilt N Ref Azimuth 160.
 Last update Cutoff date Docket
 Comments
 Applicant

Cell Size for Service Analysis 1.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Not full service station

Facility meets maximum power limit

Azimuth (Deg)	ERP (kW)	HAAT (m)	51.0 dBu F(50,90) (km)
0.0	0.004	302.9	12.6
45.0	0.002	266.3	10.7
90.0	0.016	309.7	19.4
135.0	0.593	341.2	39.6
180.0	0.721	484.3	45.4
225.0	0.039	493.0	28.2
270.0	0.002	493.0	14.9
315.0	0.001	486.8	12.6

Contour Overlap to Proposed Station

Station
 KUNP-LP 47 PORTLAND OR BLTTL20060809ABC causes

Contour overlap to Digital LPTV station

K47CD 47 ROCKAWAY OR USERRECORD05
 Required D/U ratio: 2.0

Contour Overlap Evaluation to Proposed Station Complete

LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

II. NIER Study

The power density calculations shown below were made using the techniques outlined in OET Bulletin No. 65. "Ground level" calculations in this report have been made at a reference height of 2 meters above ground to provide a worst-case estimate of exposure for persons standing on the ground in the vicinity of the tower. The equation shown below was used to calculate the ground level power density figures from each antenna.

$$S(\text{mW} / \text{cm}^2) = \frac{33.40981 \times \text{AdjERP}(\text{Watts})}{D^2}$$

Where: *AdjERP(Watts)* is the maximum lobe effective radiated power times the element pattern factor times the array pattern factor.

D is the distance in meters from the center of radiation to the calculation point.

ROWT owns and is filing applications for digital flash cut for its six TV translators operating from this transmitter site. Calculations of the power density produced by these facilities are summarized in the following table:

Call	Avg or Peak ERP Antenna Model	Relative Field	Height AGL	Calculated Max Exposure	Gen Pub FCC Limit	% of Limit
K20HT-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	339 $\mu\text{W}/\text{cm}^2$	16.7%
K36GU-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	403 $\mu\text{W}/\text{cm}^2$	14.0%
K41GG-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	423 $\mu\text{W}/\text{cm}^2$	13.4%
K44AV-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	435 $\mu\text{W}/\text{cm}^2$	13.0%
K47CD-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	447 $\mu\text{W}/\text{cm}^2$	12.7%
K51FK-D	0.975 kW avg KAT 2X1KBBU	0.125	5 m	56.6 $\mu\text{W}/\text{cm}^2$	463 $\mu\text{W}/\text{cm}^2$	12.2%

Nearby FM translator K291BI operates with an ERP of less than 100 Watts and is therefore excluded from this study.

(For TV translators, the relative field value indicated is the maximum value which occurs at 45 degrees or more below the horizontal, based on the manufacturer's vertical plane pattern. The

resulting adjusted ERP value is assumed to be radiated straight down to a point 2 meters above ground level at the base of the tower.)

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed digital flash cut facilities at this site (were their maxima to coincide) is 82% of the FCC standard for uncontrolled environments.

Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

March 26, 2010

Erik C. Swanson, P.E.