

**January 2020
KPPT-FM Channel 264C2
Depoe Bay, Oregon
Allocation Study**

Background

The instant application is being filed in order to correct the coordinates of the licensed KPPT-FM facility BLH-20030926AQJ. A recent review found that the actual tower coordinates are 0.7 seconds of latitude and 3.3 seconds of longitude different from those specified on the 2003 KPPT-FM license. Since the longitude correction exceeds 3 seconds, and since the actual site elevation is 12 meters higher than indicated on the license, the filing of a construction permit application is triggered. Due to a corresponding increase in antenna HAAT, the ERP is being reduced slightly to compensate and to remain within the Class C2 maximum.

Corrected Coordinates
NAD83 Datum N 44-45-23.1 W 124-03-01.1
NAD27 Datum N 44-45-23.7 W 124-02-56.7

The Media Bureau does not charge application filing fees for applications filed to correct station coordinates. Therefore no filing fee pertains to this application, nor to the subsequent application for license to cover.

Spacing Study

The attached spacing study shows that the corrected site coordinates meet the co-channel and adjacent channel spacing requirements for Class C2 stations as prescribed in §73.207 of the Commission's Rules.

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SEARCH PARAMETERS

Channel: 264C2 100.7 MHz
 Latitude: 44 45 23.7 (NAD27)
 Longitude: 124 2 56.7
 Safety Zone: 32 km
 Job Title: KPPT-FM 264C2 COORD CORRECTION

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Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
K210CW LIC	NEWPORT OR	BLFT-20521AAP	210D 89.9	0.050 230.0	44-40-34 124-02-31	176.4	8.96 0.00	0 TRANS
KKRZ LIC	PORTLAND OR	BLH-11214AAE	262C 100.3	100.000 470.0	45-31-21 122-44-45	49.7	133.24 28.24	105 CLEAR
KMME LIC	COTTAGE GROVE OR	BMLD-10520ABF	263C3 100.5	10.500 154.0	43-45-40 123-02-07	143.5 SS	137.08 20.08	117 CLEAR
K263AF LIC	SWEET HOME OR	BLFT-80602AJQ	263D 100.5	0.250 DA 556.0	44-23-57 122-51-47	112.5	102.23 0.00	0 TRANS
KMGX LIC	BEND OR	BLH-5892	264C1 100.7	50.000 158.0	44-04-40 121-19-49	108.3	229.30 5.30	224 CLOSE
KPPT-FM LIC	DEPOE BAY OR	BLH-30926AQJ	264C2 100.7	17.500 255.0	44-45-23 124-03-01	257.1	0.10 -189.90	190 SHORT
KQRZ-LP LIC	HILLSBORO OR	BMLL-90409AAH	264L1 100.7	0.010 95.0	45-27-28 122-52-05	49.5	121.29 0.00	0 LPFM
K264BR LIC	ROSEBURG OR	BLFT-41210ABS	264D 100.7	0.250 193.0	43-12-24 123-21-47	162.1	180.79 0.00	0 TRANS
K264AA LIC	SALEM OR	BLFT-50112AAO	264D 100.7	0.034 DA 312.0	44-51-18 123-07-15	81.2	74.25 0.00	0 TRANS
K264AA CP MOD	SALEM OR	BMPFT-90808ABP	264D 100.7	0.210 DA 313.0	44-51-18 123-07-15	81.2	74.25 0.00	0 TRANS
K264CU LIC	KELSO WA	BLFT-80530AAU	264D 100.7	0.250 DA 565.0	46-00-59 122-46-28	34.9	171.96 0.00	0 TRANS
K265DF LIC	EUGENE OR	BMLFT-40905ABN	265D 100.9	0.250 DA 380.0	44-00-04 123-06-45	138.1	112.33 0.00	0 TRANS
K265AB LIC	FLORENCE OR	BLFT-70720AAI	265D 100.9	0.240 253.0	43-57-26 124-04-26	181.3	88.85 0.00	0 TRANS
KXL-FM LIC	PORTLAND OR	BLH-00503ACD	266C 101.1	100.000 502.0	45-30-58 122-43-59	50.2	133.57 28.57	105 CLEAR

===== END OF FM SPACING STUDY FOR CHANNEL 264 =====

January 2020
KPPT-FM Channel 264C2
Depoe Bay, Oregon
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 264C2 (100.7 MHz) with an effective radiated power of 17.2 kilowatts. Operation is proposed with the existing 5-element circularly-polarized omni-directional antenna, which is installed on an existing tower at the Otter Crest communications site north of Newport.

The antenna support structure does not exceed 60.96 meters (200 feet) above ground and does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

RF Exposure Calculations

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.

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

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.

Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 500 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the KPPT-FM antenna system assume a Type 2 element pattern, which is the element pattern for the SWR FM3/5 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 7 meters from the base of

the antenna support structure. At this point the power density is calculated to be 266.4 $\mu\text{W}/\text{cm}^2$.

Calculations of the power density produced by KPPT-FM and the other stations at this transmitter site are summarized in the following table:

Call	Avg or Peak ERP Antenna Model	Relative Field	Height AGL	Calculated Max Exposure	Occupational FCC Limit	% of Limit
KPPT-FM 264C2	17.2 kW H 17.2 kW V SWR FM3/5 5-bay full-wave	FMMModel Type 2	25 m	266.4 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	26.64%
KQOC 201C2	6.50 kW H 6.50 kW V SHI 6810-2 2-bay 0.9-wave	FMMModel Type 1	52 m	90.4 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	9.04%
KYOR 205A	0.035 kW H 0.035 kW V SHI 6812B-1 1-bay	FMMModel Type 1	30 m	1.8 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	0.18%
KLCO 213C3	3.0 kW H 3.0 kW V ERI LPX-4E-HW 4-bay 0.5-wave	FMMModel Type 3	27 m	8.0 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	0.80%
KNCU 224C3	3.8 kW H 3.8 kW V ERI LP-3E-HW 3-bay 0.5-wave	FMMModel Type 3	28 m	16.1 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	1.61%
K239BO	0.030 kW H 0.030 kW V SHI 6812B-2-SS 2-bay half-wave	FMMModel Type 1	15 m	1.4 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	0.14%
KCRF-FM 244C1	19.5 kW H 19.5 kW V ERI G5CPS-5BE 5-bay full-wave	FMMModel Type 3	41 m	64.9 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	6.49%
KSHL 248C2	7.0 kW H 7.0 kW V ERI LPX-3E 3-bay full-wave	FMMModel Type 3	26 m	85.3 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	8.53%
K252EQ	0.090 kW H 0.090 kW V SHI 6812-1 1-bay	FMMModel Type 1	16 m	18.5 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	1.85%
K295BJ	0.040 kW H 0.040 kW V SCA CA5CP 1-bay	FMMModel Type 1	9 m	32.8 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	3.28%

KDLN-LP Ch4 analog	2.25 kW H KAT CL-46	0.391	20 m	17.7 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	1.77%
K05KY Ch5 analog	2.25 kW H KAT CL-46	0.391	20 m	17.7 $\mu\text{W}/\text{cm}^2$	1000 $\mu\text{W}/\text{cm}^2$	1.77%
K15DS-D	2.0 kW H ALP4L1-HSH	0.280	12.2 m	50.4 $\mu\text{W}/\text{cm}^2$	1586 $\mu\text{W}/\text{cm}^2$	3.18%
K18FR-D	5.4 kW H KAT K723147 4X2	0.075	48 m	0.5 $\mu\text{W}/\text{cm}^2$	1646 $\mu\text{W}/\text{cm}^2$	0.03%
K23OC-D	7.21 kW H KAT K723147 4X2	0.075	48 m	0.6 $\mu\text{W}/\text{cm}^2$	1746 $\mu\text{W}/\text{cm}^2$	0.03%
K05KY-D Ch27 digital CP	9.0 kW H SCA PRTV	0.070	35 m	1.4 $\mu\text{W}/\text{cm}^2$	1826 $\mu\text{W}/\text{cm}^2$	0.08%
K29AZ-D	5.7 kW H KAT K723147 4X2	0.075	48 m	0.5 $\mu\text{W}/\text{cm}^2$	1866 $\mu\text{W}/\text{cm}^2$	0.03%
K32NK-D	5.0 kW H JAM ODD	see note	38 m	see note	1926 $\mu\text{W}/\text{cm}^2$	5.00% see note
Total						70.45%

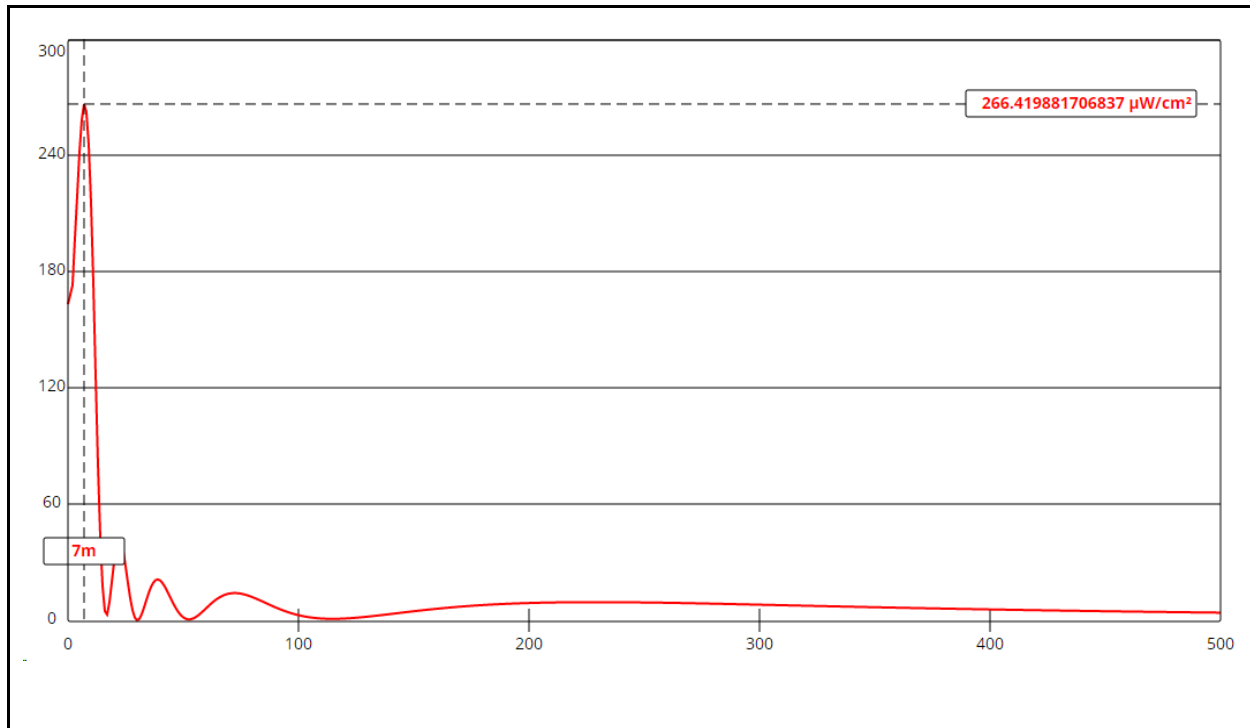
Notes:

A) 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.

B) For K32NK-D the actual antenna model is not known, as it was listed in the most recent CP application 0000054852 (requesting displacement from Ch42) simply as a "Jampro ODD891208NZ". The engineering exhibit accompanying that application does not lend any further clarity, as it states only that "NIER is less than 5% of the limit for this service." No details of the calculations are provided, nor any further description of the antenna. Out of an abundance of caution, the table above assumes a 5% contribution from K32NK-D.

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of KPPT-FM and the present operation of the other stations at this site (were their maxima to coincide, which they do not) is 70.45% of the FCC standard for controlled environments such as this one.

Public access to the Otter Crest transmitter site is restricted by a locked gate and the site is posted with warning signs. Entry roads are primitive and access to the general public is precluded. This is considered to be a controlled environment. 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 exposure in excess of FCC guidelines.



Ground-Level RF Exposure

OET FMModel

KPPT-FM 264C2 Depoe Bay

Antenna Type: SWR FM3/5 (Type 2)

No. of Elements: 5

Element Spacing: 1.0 wavelength

Distance: 500 meters

Horizontal ERP: 17.2 kW

Vertical ERP: 17.2 kW

Antenna Height: 25 meters AGL

Maximum Calculated Power Density is 266.4 $\mu\text{W}/\text{cm}^2$ at 7 meters from the antenna structure.





Mercator Projection
WGS84
USNG Zone 10TDQ
CalTopo

