

**December 2023
New LPFM Station
Spokane, WA
Channel 298L1
Allocation Study**

Spacing Study

The instant application proposes a new LPFM station on Channel 298L1. The following spacing study shows that the proposed operation meets the co-channel and adjacent channel spacing requirements for Class L1 stations as prescribed in §73.807 of the Commission's Rules, with the one exception addressed below.

KMBI-FM 300C Spokane

The proposed LPFM transmitter site is short-spaced to (and located within the protected contour of) second-adjacent channel station KMBI-FM 300C Spokane. A second-adjacent channel waiver is respectfully requested, in accordance with the requirements of §73.807(e)(1) of the Commission's Rules. The following calculation, performed using the *D/U ratio* methodology, addresses interference protection to that station.

<i>Protected Station</i>	<i>Distance & Bearing to Proposal</i>	<i>Station ERP and HAAT on that azimuth</i>	<i>Station Field Strength at Proposal</i>	<i>Corresponding LPFM Interfering Contour</i>	<i>Distance to LPFM Interfering Contour</i>
KMBI-FM 300C	16.32 km 279 deg True	64 kW 739 meters	97.1 dBu F(50,50)	137.1 dBu	36 meters Free Space

The 137.1 dBu interfering contour from the proposed facility (1 watt ERP) would extend only 1 meters from the antenna per a Free Space calculation, and would not reach ground level (which is 30.5 meters below the antenna). This area is unpopulated. Therefore, the proposed facility satisfies the waiver requirements of §73.807(e)(1) with respect to KMBI-FM.

SEARCH PARAMETERS

FM Database Date: 20231207

Channel: 298L1 107.5 MHz
 Latitude: 47 35 34.5 (NAD83)
 Longitude: 117 17 55.6
 Safety Zone: 32 km
 Job Title: LPFM 298L1

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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)
KPKL-FM1 LIC	SPOKANE WA	BLFTB-20190513AA	296D 107.1	5.000 0.0	DA 47 41 51.6 117 31 10.8	305.2	20.28 0.00	0 BOOST
KPKL LIC	DEER PARK WA	BLH-20040929AND	296C3 107.1	25.000 100.0	48 1 44.6 117 36 0.8	335.2	53.49 13.49	40 CLEAR
K298BQ LIC	COEUR D'ALENE ID	BLFT-20160819ABI	298D 107.5	0.010 0.0	47 43 53.6 116 43 48.6	69.9	45.41 13.41	32 CLEAR
KMBI-FM LIC	SPOKANE WA	BMLED-19990113KA	300C 107.9	64.000 725.0	47 34 14.6 117 5 3.7	98.6	16.32 -76.68	93 SHORT

==== END OF FM SPACING STUDY FOR CHANNEL 298 =====

**December 2023
New LPFM Station
Spokane, WA
Channel 298L1
RF Exposure Study**

Facilities Proposed

The proposed operation will be on Channel 298L1 (107.5 MHz) with a maximum lobe effective radiated power of 1 watt. Operation is proposed with an antenna to be mounted on an existing tower with FCC Antenna Structure Registration Number 1323842.

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.

$$S(\mu W / cm^2) = \frac{33.4 \times AdjERP(Watts)}{D^2}$$

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

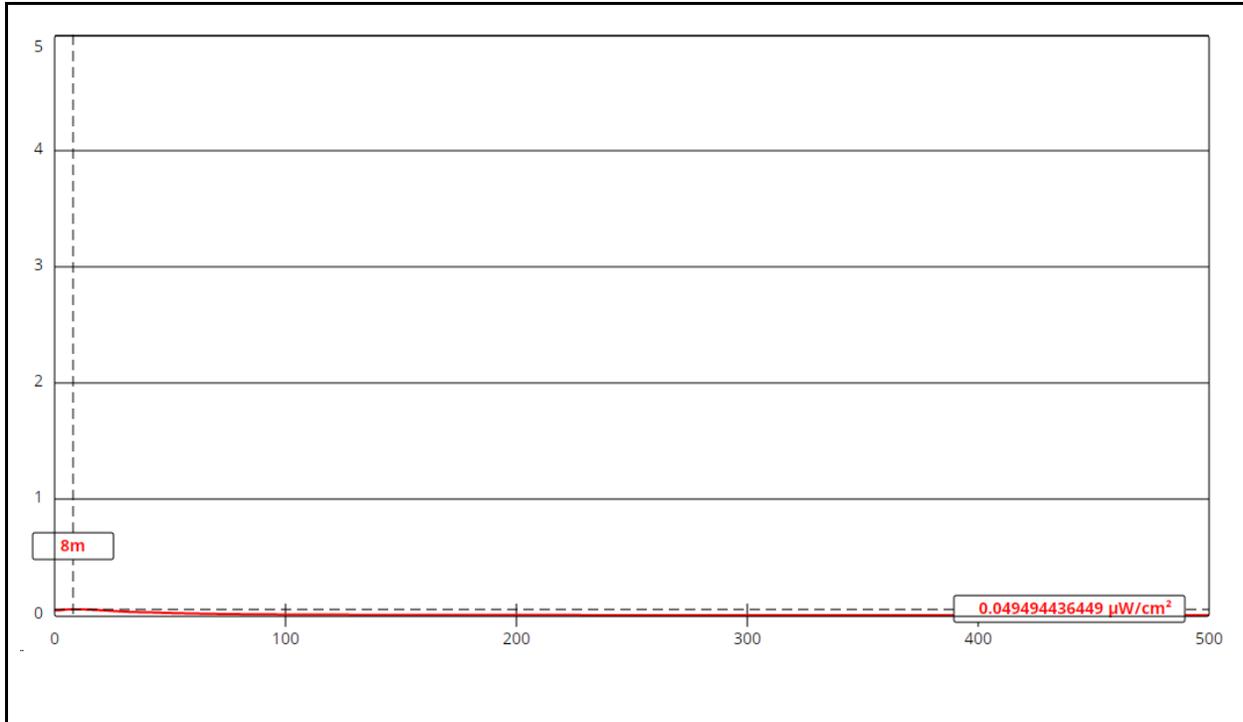
D is the distance in meters from the center of radiation to the calculation point.

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.

"Worst case" calculations of the power density produced by the proposed antenna system assume a single-bay Type 1 element pattern, which is the "worst case" element pattern in the Commission's *FMM* software. The highest calculated ground level power density occurs at a distance of 8 meters from the base of the antenna support structure. At this point the power density is calculated to be 0.05 $\mu W/cm^2$, which is 0.025% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307 of the Commission's Rules exempts applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicant's proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in compliance with Section 1.1301 *et seq* and no further analysis of RF exposure at this site is required in this application.

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

Spokane 298L1

Antenna Type: Type 1
 No. of Elements: 1
 Element Spacing: 1 wavelength

Distance: 500 meters
 Horizontal ERP: 1 W
 Vertical ERP: 1 W

Antenna Height: 30.5 meters AGL

Maximum Calculated Power Density is 0.05 $\mu\text{W}/\text{cm}^2$ at 8 meters from the antenna structure.