

**September 2021
New FM Channel 234A
Village of Oak Creek, AZ
Allocation Study**

Background

The instant application is being filed by the winning bidder for the Channel 234C1 allotment at Overgaard, Arizona, offered as Permit MM-FM1180-C1 in FM Auction #109. This application proposes a downgrade to Channel 234A and a change of community of license to Village of Oak Creek, Arizona.

Spacing Study

A single allotment and transmitter site is proposed. The attached spacing study shows that the proposed site meets the co-channel and adjacent channel spacing requirements for Class A stations as prescribed in §73.207 of the Commission's Rules.

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SEARCH PARAMETERS FM Database Date: 20210830

Channel: 234A 94.7 MHz Page 1

Latitude: 34 52 56.0 (NAD83)

Longitude: 111 40 50.0

Safety Zone: 32 km

Job Title: VILLAGE OF OAK CREEK 234A

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
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KOOL-FM LIC	PHOENIX AZ	BMLH-20021018AAD	233C 94.5	100.000 504.0	33 20 2.2 112 3 44.5	191.6	175.31 10.31	165 CLEAR
KOII-LP LIC	FLAGSTAFF AZ	BLL-20160104AMG	233L1 94.5	0.100 0.0	35 11 54.0 111 38 58.6	4.6	35.18 0.00	0 LPFM
KOII-LP LICAPP	FLAGSTAFF AZ	0000151373	233L1 94.5	0.100 0.0	35 11 54.0 111 38 58.6	4.6	35.18 0.00	0 LPFM
KFLG-FM LIC	BIG RIVER CA	BLH-20080409ADN	234C0 94.7	19.500 834.0	34 33 6.0 114 11 39.8	261.6	233.18 18.18	215 CLEAR
NEW ALC	OVERGAARD AZ		234C1 94.7	0.000 0.0	34 45 23.1 110 34 43.5	97.6	101.77 -98.23	200 SHORT
K234CF LIC	PRESCOTT AZ	BLFT-20150605AAY	234D 94.7	0.250 0.0	DA 34 41 15.1 112 7 3.6	241.7	45.47 0.00	0 TRANS
KOAI LIC	SUN CITY WEST AZ	BLH-20050623AAN	236C 95.1	41.000 849.0	34 14 5.1 112 22 4.6	221.4 SS	95.60 0.60	95 CLOSE

===== END OF FM SPACING STUDY FOR CHANNEL 234 =====

KACHINA VILLAGE

MOUNTAINAIRE

**70 dBu
16.2 km radius**

COCONINO

MUNDS PARK

SEDONA

VILLAGE OF OAK CREEK

CORNVILLE

YAVAPAI

LAKE MONTEZUMA

CAMP VERDE

Village of Oak Creek 234A Allotment 70 dBu

0 5 10 15

Kilometers

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Hatfield & Dawson

9/2021

**September 2021
New FM Channel 234A
Village of Oak Creek, AZ
RF Exposure Study**

Facilities Proposed

The proposed operation will be on Channel 234A (94.7 MHz) with an effective radiated power of 0.5 kilowatts. Operation is proposed with a 2-element circularly-polarized omni-directional antenna. The antenna will be side-mounted on an existing tower on Schnebly Hill, with FCC Antenna Structure Registration Number 1007629.

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.

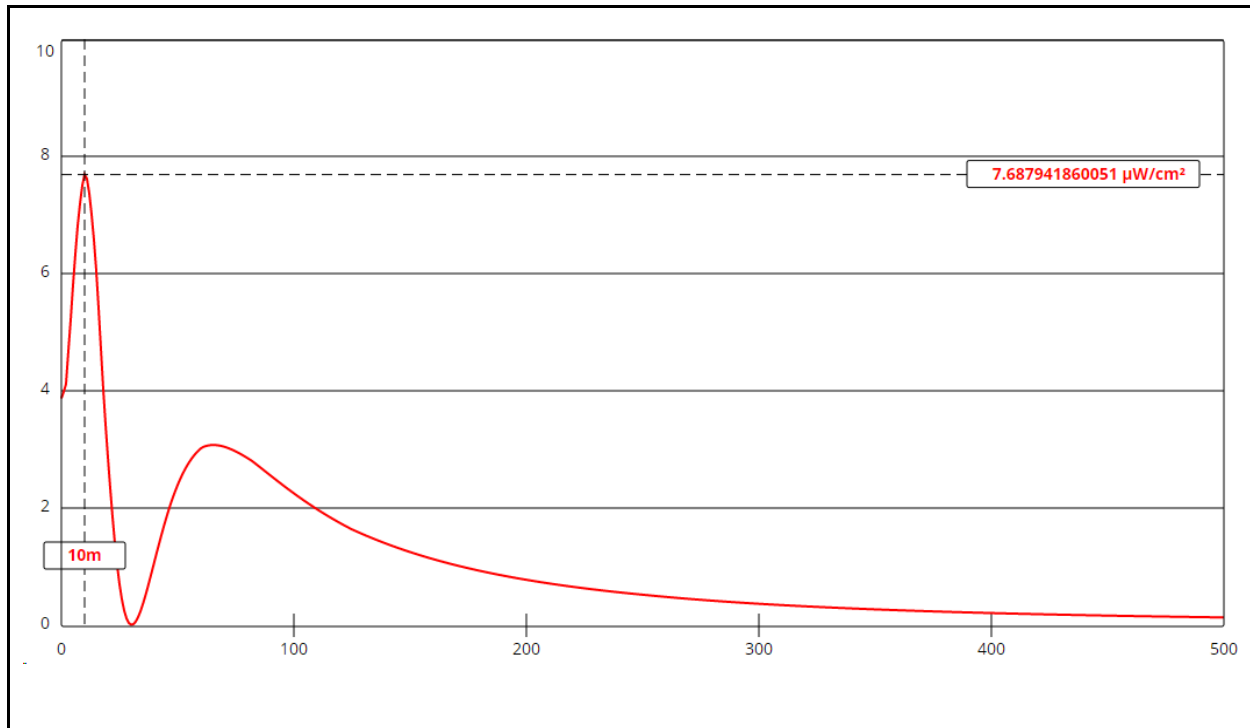
D is the distance in meters from the center of radiation to the calculation point.

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 proposed antenna system assume a Type 2 element pattern, which is the element pattern for the Bext TFC2K-2 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 10 meters from the base of the antenna support structure. At this point the power density is calculated to be 7.7 $\mu W/cm^2$, which is 3.9% 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

New 234A Village of Oak Creek

Antenna Type: Bext TFC2K-2 (Type 2)
No. of Elements: 2
Element Spacing: 0.85 wavelength

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

Antenna Height: 24 meters AGL

Maximum Calculated Power Density is 7.7 $\mu\text{W}/\text{cm}^2$ at 10 meters from the antenna structure.

