

**July 2022
KBKO(FM) Channel 202A
Kodiak, Alaska
Allocation Study**

The instant application proposes modification of the KBKO construction permit 0000191067, to change the antenna model and increase the antenna height, based on updated data on the building height.

The attached spacing study shows the co-channel and adjacent channel spacing between stations and demonstrates that the proposed operation meets the IF channel spacing requirements as prescribed in §73.207 of the Commission's Rules.

Individual stations were examined to confirm the lack of prohibited contour overlap as prescribed in §73.509 of the Commission's Rules. There are no stations close enough to warrant the inclusion of detailed allocation study maps.

TV Channel 6

Section 73.525 of the Commission's Rules specifies a threshold distance of 257 kilometers for FM stations operating on Channel 202. There is no TV Channel 6 station located within this threshold distance.

```
=====
SEARCH PARAMETERS                               FM Database Date: 20220719
Channel: 202A      88.3 MHz                               Page   1
Latitude:  57 48 40.1  (NAD83)
Longitude: 152 21 39.7
Safety Zone:  50 km
Job Title: KBKO 202A KODIAK
```

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KBKO	KODIAK		202A	0.100	57 48 37.3	237.0	0.16	115
LIC	AK	BLD-20120627AAY	88.3	-8.0	152 21 47.8		-114.84	SHORT
KBKO	KODIAK		202A	0.100	57 48 40.1	0.0	0.00	115
CP	AK	0000191067	88.3	1.0	152 21 39.7		-115.00	SHORT

===== END OF FM SPACING STUDY FOR CHANNEL 202 =====

**July 2022
KBKO(FM) Channel 202A
Kodiak, Alaska
RF Exposure Study**

Facilities Proposed

The proposed operation will be on Channel 202A (88.3 MHz) with an effective radiated power of 0.1 kilowatts. Operation is proposed with a 1-element circularly-polarized omni-directional antenna. The antenna will be side-mounted on a on a pipe/pole extending 8 feet above the roof of an existing building.

The building to which the pipe/pole will be attached is 27 feet above ground level. The pipe will extend to 35 feet above ground level.

Antenna Structure Registration

The proposed antenna support structure will extend less than 20 feet above the top of an existing building and therefore does not require notification to the Federal Aviation Administration. Therefore, this structure does not require an Antenna Structure Registration Number.

DETERMINATION Results	
Structure does not require registration. The structure meets the 6.10-meter (20-foot) Rule criteria.	
Your Specifications	
NAD83 Coordinates	
Latitude	57-48-40.1 north
Longitude	152-21-39.7 west
Measurements (Meters)	
Overall Structure Height (AGL)	10.7
Support Structure Height (AGL)	8.2
Site Elevation (AMSL)	53
Structure Type	
BPIPE - Building with Pipe	

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.

Ground Level

Calculations of the ground level power density produced by the proposed antenna system assume a Type 1 element pattern, which is the element pattern for the Shively 6812B-1 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 2 meters from the base of the antenna support structure. At this point the power density is calculated to be 52.9 $\mu W/cm^2$, which is 26.5% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

Building Floor Level

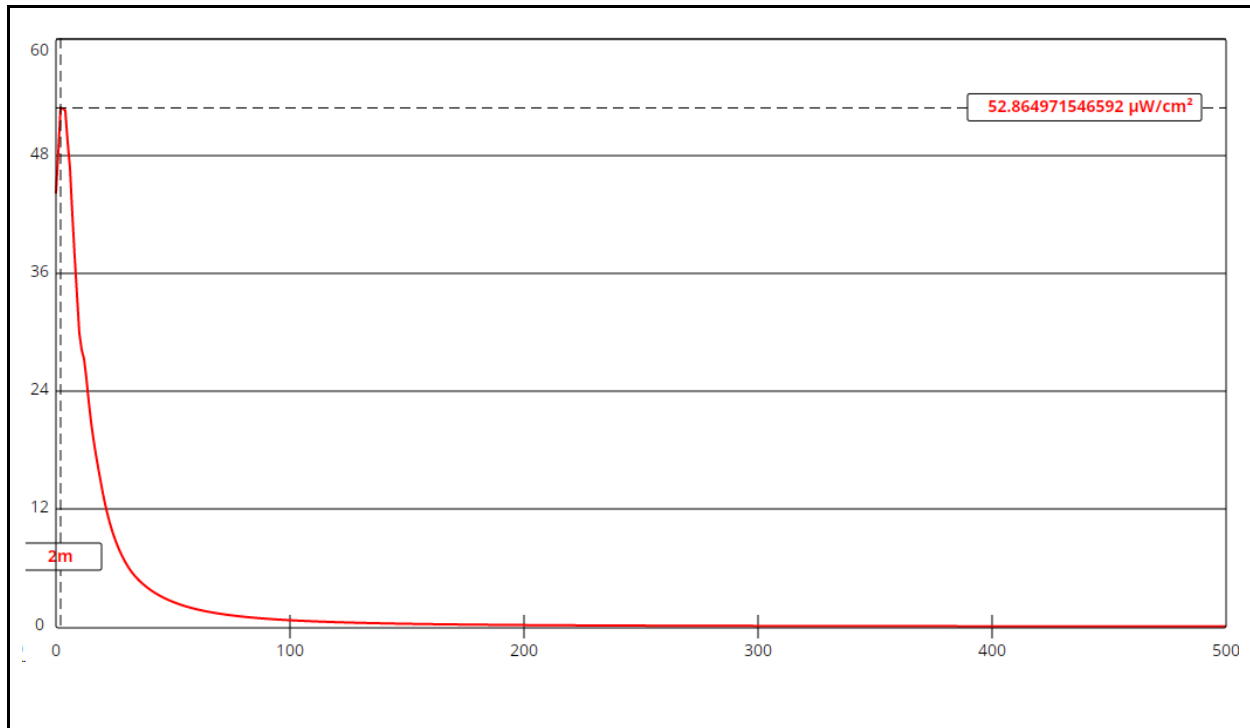
The antenna will be installed at the top of a pole extending 8 feet above the rooftop of a 27 foot tall gymnasium building. (See attached elevation diagram.) The only floor of the building is 35 feet (10.7 meters) below the antenna. Therefore, the above calculation, documenting a calculated power density of 52.9 $\mu W/cm^2$, which is 26.5% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments), applies equally to the only floor of the building.

Rooftop Level

The antenna will be installed at the top of a pole extending 8 feet above the building rooftop. The rooftop is pitched and is not accessible. There is no installed ladder or other permanent rooftop access in place, and there is no rooftop HVAC equipment which might require periodic maintenance. Should it be necessary for building staff or contractors to access the rooftop for maintenance or any other reason, the station will either reduce power or cease operation. Appropriate RF warning signage will be installed, but given the lack of any rooftop access there is

no need to perform post-construction RF exposure measurements on the building rooftop.

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

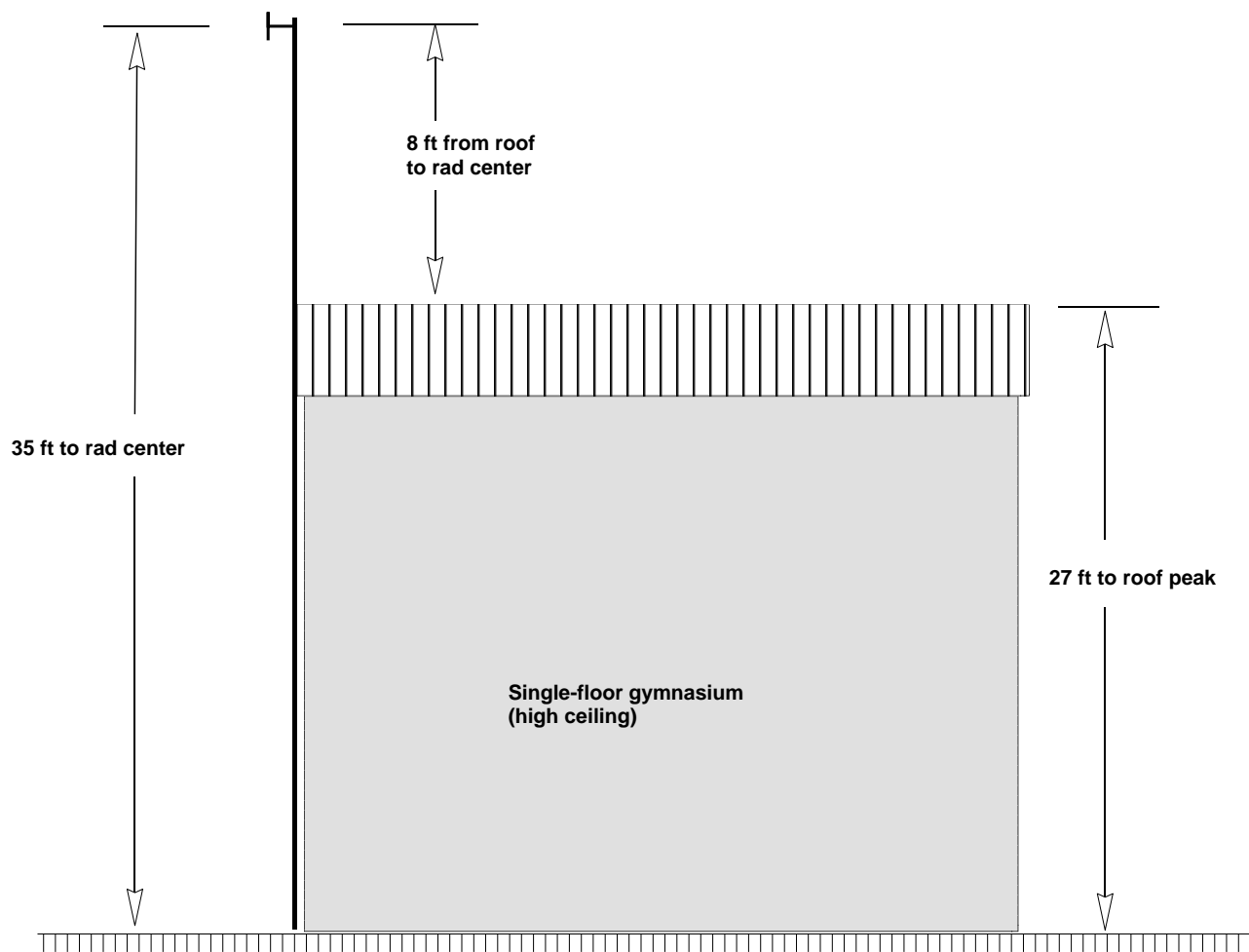
KBKO 202A Kodiak

Antenna Type: Shively 6812B-1 (Type 1)
 No. of Elements: 1
 Element Spacing: 1.0 wavelength

Distance: 500 meters
 Horizontal ERP: 100 W
 Vertical ERP: 100 W

Antenna Height: 10.7 meters AGL

Maximum Calculated Power Density is 52.9 $\mu\text{W}/\text{cm}^2$ at 2 meters from the antenna structure.



not to scale

KBKO 202A Elevation Diagram

0 5 10 15
Kilometers

Hatfield & Dawson 7/2022

