June 2022
FM Translator K232EH
Sterling, Alaska Channel 232D
Allocation Study

The attached spacing study shows the spacing between the proposed translator site and the location of cochannel and adjacent channel stations and proposals. This study was made with the Commission's Class A spacing requirements, and individual situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204 of the Rules. There are no cochannel or adjacent channel stations close enough to require the inclusion of detailed allocation study maps in this application.

The attached spacing study demonstrates compliance with §73.207 of the Commission's Rules regarding spacing restrictions to stations which are 53 or 54 channels removed from the proposed operation.

FMSTUDY.EXE Copyright 2021, Hatfield & Dawson, LLC Version 5.10

SEARCH PARAMETERS FM Database Date: 20220523

Channel: 232A 94.3 MHz

Latitude: 60 30 52.3 (NAD83)

Longitude: 151 11 33.4

Safety Zone: 50 km

Job Title: K232EH STERLING MOD

Call Status	City St FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KAFC LIC	ANCHORAGE AK BLH-19991007ABE	229C2 93.7	27.000 202.0	61 4 0.0 149 44 43.9	51.3	99.99 44.99	55 CLEAR
K232EH LIC	STERLING AK BLFT-20140512AAL	232D 94.3	0.250 0.0	60 30 32.9 151 4 17.0	95.1	6.69 0.00	0 TRANS
K233CD LIC	HOMER AK BLFT-20150724AAB	233D 94.5	0.019 0.0	59 40 11.7 151 30 46.0	190.8	95.77 0.00	0 TRANS
K285EF LIC	KENAI AK BLFT-19920410TE	285D 104.9	0.250 DA 0.0	60 30 37.9 151 16 20.0	264.2	4.40 0.00	0 TRANS

==== END OF FM SPACING STUDY FOR CHANNEL 232 ====

June 2022
FM Translator K232EH
Sterling, Alaska Channel 232D
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 232D (94.3 MHz) with an effective radiated power of 250 watts. Operation is proposed with a single-bay dipole antenna to be mounted on an existing tower.

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.

DETERMINATION Results

PASS SLOPE(100:1): NO FAA REQ-RWY MORE THAN 10499 MTRS & 6499.85 MTRS (6.49990 KM) AWAY

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	60-33-47.00N	151-15-30.00W	KENAI MUNI	KENAI-COOK INLET KENAI, AK	25.6	2394.1999999999998

PASS SLOPE(100:1): NO FAA REQ-RWY MORE THAN 10499 MTRS & 7188.70 MTRS (7.18869 KM) AWAY

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	60-34-30.00N	151-14-18.00W	KENAI MUNI	KENAI-COOK INLET KENAI, AK	25.6	2394.1999999999998

PASS SLOPE(25:1): NO FAA REQ-HELIPORT 6676.64 MTRS (6.67659 KM) AWAY

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
HELI	B	60-29-34.00N	151-04-44.00W	SOLDOTNA HOSPITAL H	KENAI-COOK INLET SOLDOTNA, AK	30.2	24.399999999999999

Your Specifications

NAD83 Coordinates	
Latitude	60-30-52.3 north
Longitude	151-11-33.4 west
Measurements (Meters)	
Overall Structure Height (AGL)	48.8
Support Structure Height (AGL)	48.8
Site Elevation (AMSL)	16
Structure Type	
LTOWER - Lattice Tower	

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.

$$S(\mu W / cm^2) = \frac{33.41 \times AdjERP(Watts)}{D^2}$$

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 1 element pattern, which is the “worst case” element pattern in FMModel. 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 8.0 μW/cm², which is 4% of 200 μW/cm² (the FCC standard for uncontrolled environments).

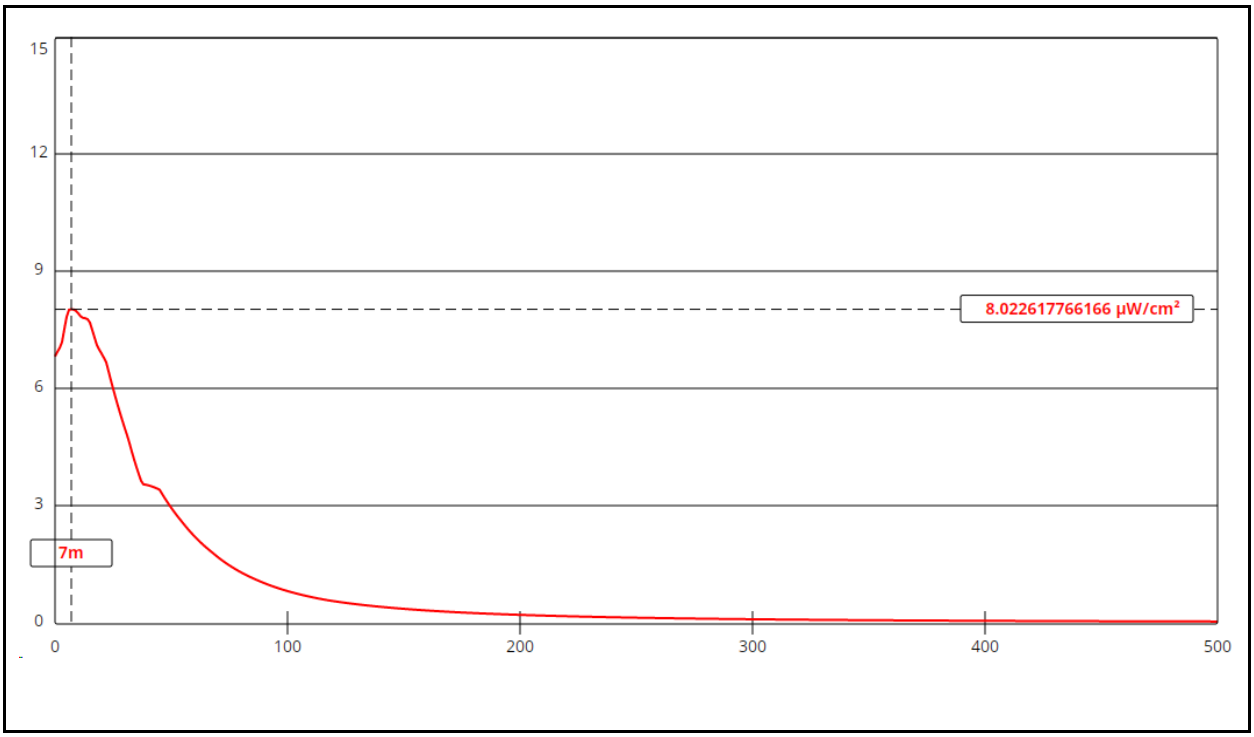
These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 500 meters from the base of the antenna support structure. Section 1.1307 of 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.

Nearby AM Station KSRM

The FM translator antenna will be installed on an existing 48.8 meter tall tower adjacent to the studio/transmitter building at antenna site of KSRM 920 kHz Soldotna, which operates nondirectional fulltime. While the tower on which K232EH will be installed is less than one wavelength from the KSRM antenna, the tower is less than 60 electrical degrees tall (which would be 54.31 meters) at the wavelength of the AM station. Per §1.30002 of the Commission's Rules, this is not classified as a significant modification, and no further analysis is required with respect to potential impact on KSRM.

KSRM operates with 5 kilowatts nondirectional day and night. The AM tower is 93.6 electrical degrees tall, or 26% of the station wavelength. Using Tables 1-4 in OET Bulletin No. 65, the fencing distance requirement for this station is 2 meters from the tower base. The tower is fenced to at least this distance.



Ground-Level RF Exposure **OET FMModel**

K232EH Sterling

Antenna Type:	Type 1
No. of Elements:	1
Element Spacing:	1.0 wavelength
Distance:	500 meters
Horizontal ERP:	zero W
Vertical ERP:	250 W
Antenna Height:	33.5 meters AGL

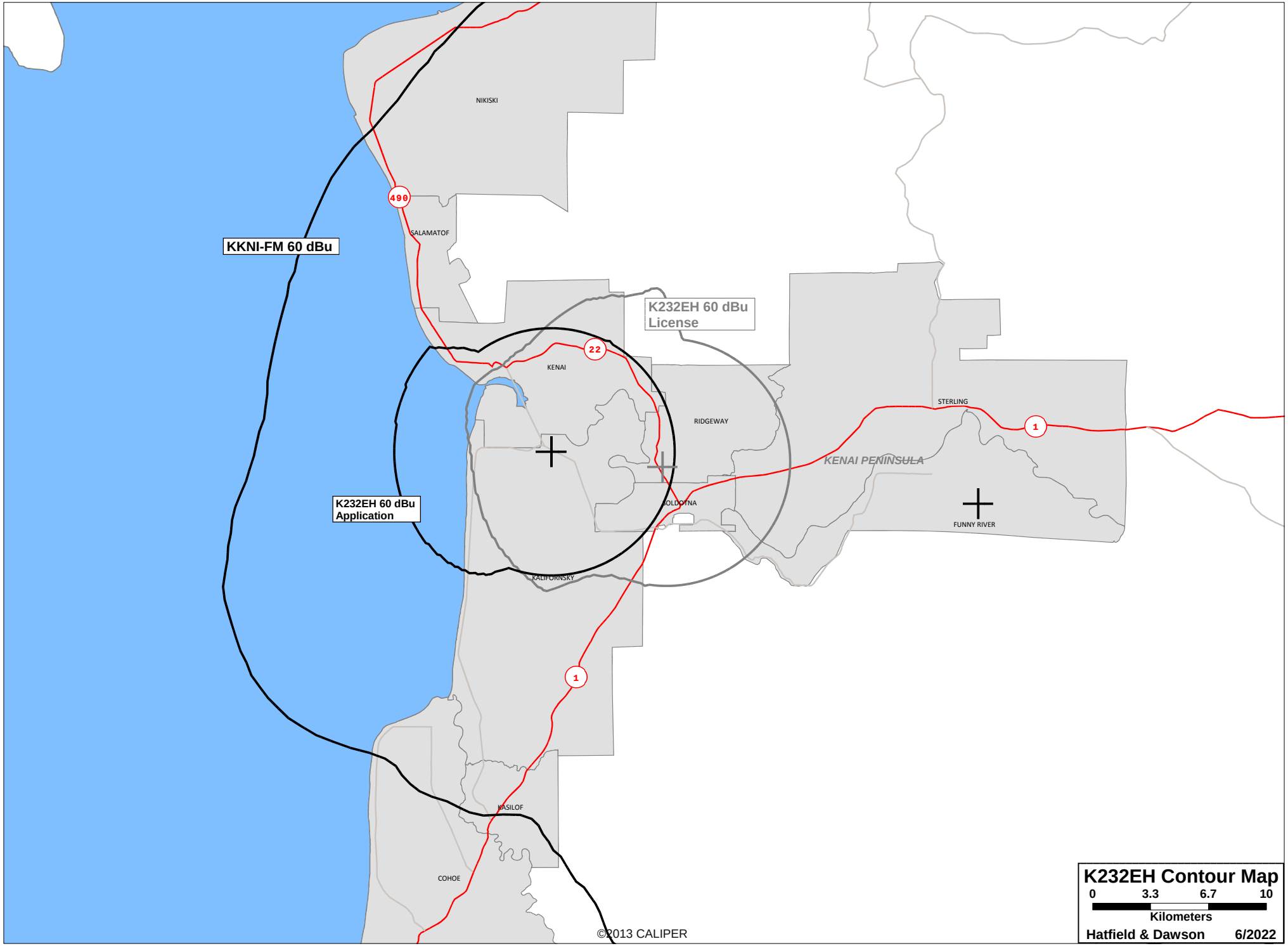
Maximum Calculated Power Density is 8.0 µW/cm^2 at 7 meters from the antenna structure.

Mercator Projection
WGS84
UTM Zone 5V
CALTOPO

0.5 1.0 1.5 2.0 2.5 km
0.5 1.0 1.5 mi
Scale **1:24000** 1 inch = 2000 feet

MN
14.7º

Hatfield & Dawson Consulting Engineers


KKNI-FM 60 dBu
K232EH 60 dBu
License
K232EH 60 dBu
Application
NIKISKI
SALAMATOF
KENAI
RIDGEWAY
STERLING
KENAI PENINSULA
SOLDOTNA
FUNNY RIVER
KALIFORNSKY
KASILOF
COHOE
490
22
1
1
K232EH Contour Map
0 3.3 6.7 10
Kilometers
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