

March 2013
FM Translator K242AH
Clearlake, California Channel 243D
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. The attached allocation study map demonstrates compliance with the Commission's Rules for protection of FM broadcast stations and FM translators as outlined in §74.1204.

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.

It should be noted that the proposed facility will operate on a first-adjacent channel with K242AD Boonville. The two translator are currently cochannel. K242AD and K242AH are commonly-owned by Bicoastal Media Licenses LLC ("Bicoastal") and Bicoastal is simultaneously submitting a Form 349 application proposing to modify K242AD to operate from a new transmitter site. As is demonstrated on the attached first-adjacent channel study map, the modifications of both translators will ensure a lack of prohibited contour overlap between the two translators.

SEARCH PARAMETERS

FM Database Date: 130322

Channel: 243A 96.5 MHz
 Latitude: 39 2 56
 Longitude: 122 46 2
 Safety Zone: 50 km
 Job Title: PINE MTN 243

Page 1

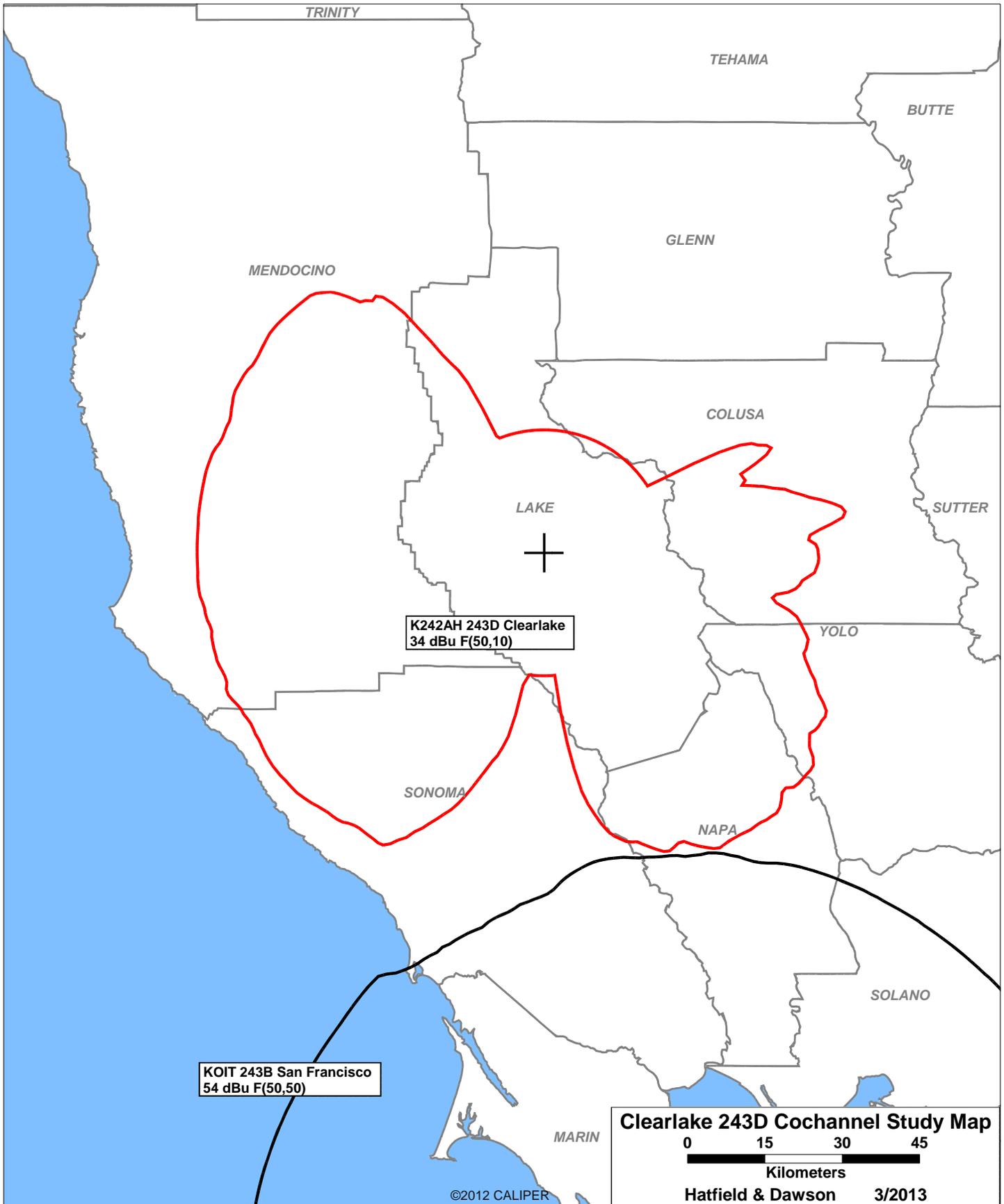
Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KRSH LIC	HEALDSBURG CA	BMLH-70817AAO	240A 95.9	2.650 153.0	38-44-08 122-50-55	191.5	35.49 4.49	31 CLOSE
K240AU LIC	UKIAH CA	BLFT-970303TC	240D 95.9	0.090 712.0	DA 39-19-33 123-16-22	305.4	53.42 0.00	0 TRANS
KYMX LIC	SACRAMENTO CA	BLH-850313KK	241B 96.1	50.000 145.0	38-38-09 121-33-11	113.2	114.96 45.96	69 CLEAR
K242AD LIC	BOONVILLE CA	BLFT-950331TB	242D 96.3	0.074 780.0	DA 38-57-00 123-13-23	254.5	40.99 0.00	0 TRANS
KFMI LIC	EUREKA CA	BLH-5918	242C 96.3	30.000 482.0	40-43-36 123-58-18	331.5	212.87 47.87	165 CLEAR
K242AH LIC	KELSEYVILLE CA	BLFT-950130TB	242D 96.3	0.009 265.0	39-00-05 122-46-01	179.7	5.27 0.00	0 TRANS
NEW-T APP	FORT BRAGG CA	BNPFT-30317ABU	243D 96.5	0.250 39.0	39-26-43 123-48-22	296.6	99.90 0.00	0 TRANS
KOIT-FM3 LIC	MARTINEZ, ETC. CA	BLFTB-920824TD	243D 96.5	3.300 305.0	DA 37-55-57 122-07-21	155.5	136.09 0.00	0 BOOST
KOIT LIC	SAN FRANCISCO CA	BMLH-11004ACJ	243B 96.5	24.000 480.0	37-45-19 122-27-06	169.1	146.21 -31.79	178 SHORT
KOITaux LIC	SAN FRANCISCO CA	BXLH-71210ACZ	243B 96.5	24.000 256.0	37-45-19 122-27-06	169.1	146.21 0.00	0 AUX
KLCA LIC	TAHOE CITY CA	BLH-980116KC	243C1 96.5	6.100 903.0	39-18-38 119-53-01	82.4 SS	250.86 50.86	200 CLEAR
KNOB LIC	HEALDSBURG CA	BMLH-90429AAV	244A 96.7	2.400 160.0	38-44-08 122-50-55	191.5	35.49 -36.51	72 SHORT
KZAP LIC	PARADISE CA	BLH-950531KC	244B1 96.7	1.500 393.0	39-57-45 121-42-40	41.4	136.16 40.16	96 CLEAR
K244AH LIC	UKIAH, ETC. CA	BLFT-841012TB	244D 96.7	0.039 708.0	39-19-36 123-16-12	305.6	53.27 0.00	0 TRANS

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SEARCH PARAMETERS                               FM Database Date: 130322
Channel: 243A      96.5 MHz                      Page 2
Latitude: 39 2 56
Longitude: 122 46 2
Safety Zone: 50 km
Job Title: PINE MTN 243
    
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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)
KULV LIC	UKIAH CA	BLED-30917AEI	246A 97.1	0.130 603.0	39-07-50 123-04-32	288.9	28.18 -2.82	31 SHORT
KSRT LIC	CLOVERDALE CA	BLH-20509AAT	296A 107.1	3.500 131.0	38-48-34 123-02-56	222.6	36.10 26.10	10 CLEAR
K296ES LIC	LAKEPORT CA	BLFT-990615UB	296D 107.1	0.240 DA 809.0	39-07-49 123-04-31	288.9	28.14 0.00	0 TRANS

==== END OF FM SPACING STUDY FOR CHANNEL 243 =====



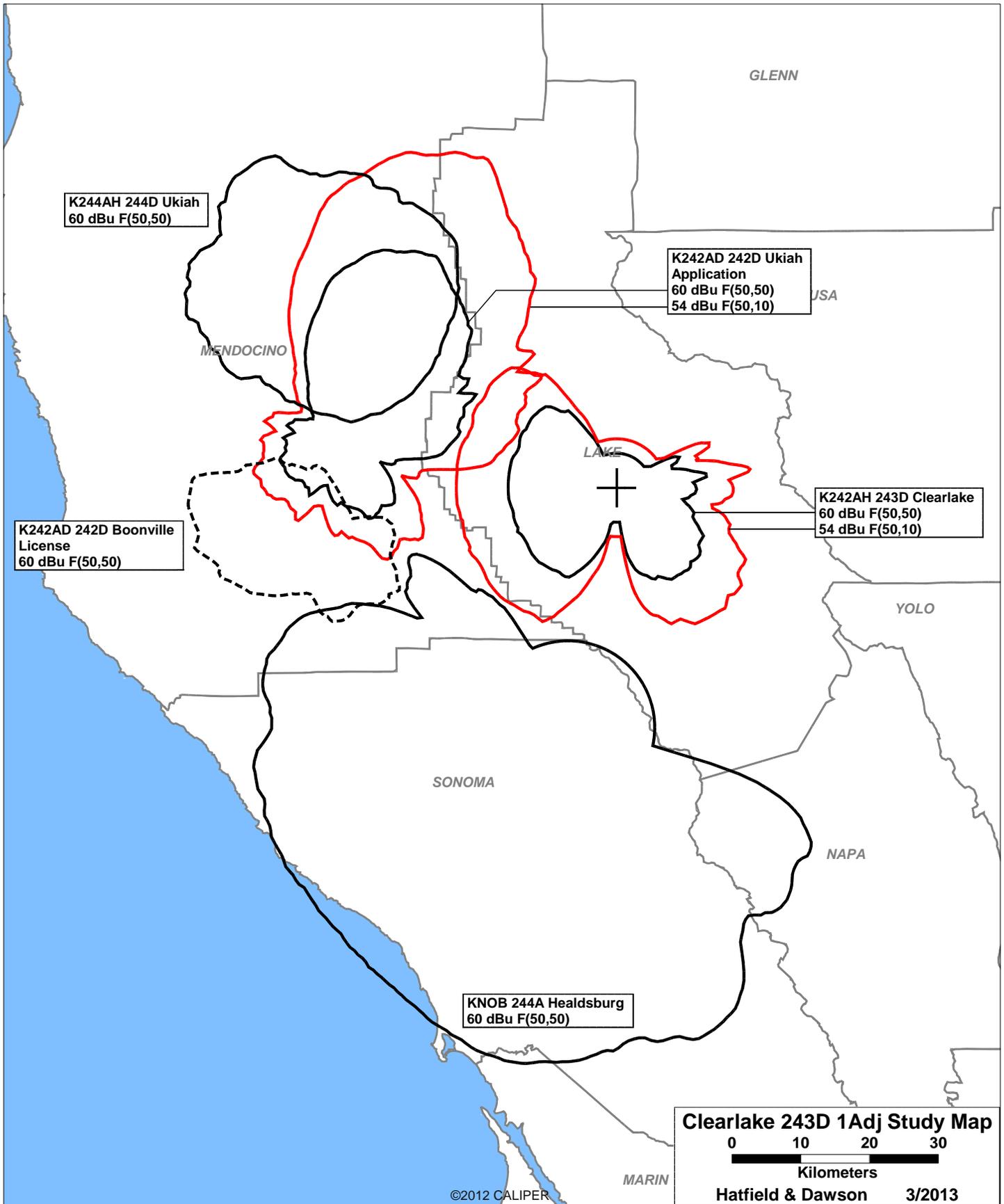
K242AH 243D Clearlake
34 dBu F(50,10)

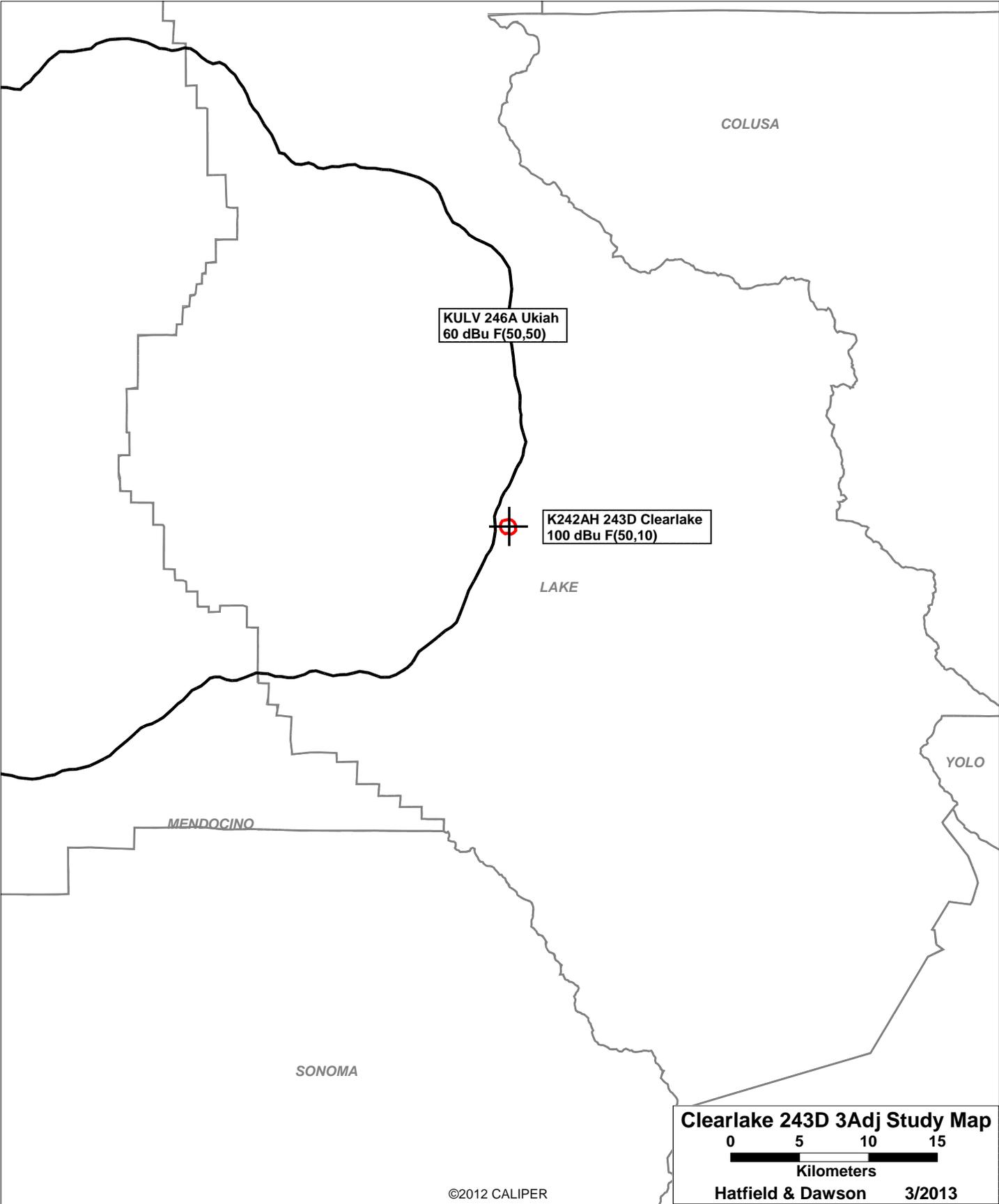
KOIT 243B San Francisco
54 dBu F(50,50)

Clearlake 243D Cochannel Study Map

0 15 30 45
Kilometers

Hatfield & Dawson 3/2013





COLUSA

KULV 246A Ukiah
60 dBu F(50,50)

K242AH 243D Clearlake
100 dBu F(50,10)

LAKE

YOLO

MENDOCINO

SONOMA

Clearlake 243D 3Adj Study Map

0 5 10 15



Kilometers

Hatfield & Dawson 3/2013

March 2013
FM Translator K242AH
Clearlake, California Channel 243D
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 243D (96.5 MHz) with an effective radiated power of 60 watts. Operation is proposed with an antenna to be mounted on an existing pole on Pine Mountain.

The proposed antenna support structure will 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 1000 meters. Values past this point are increasingly negligible.

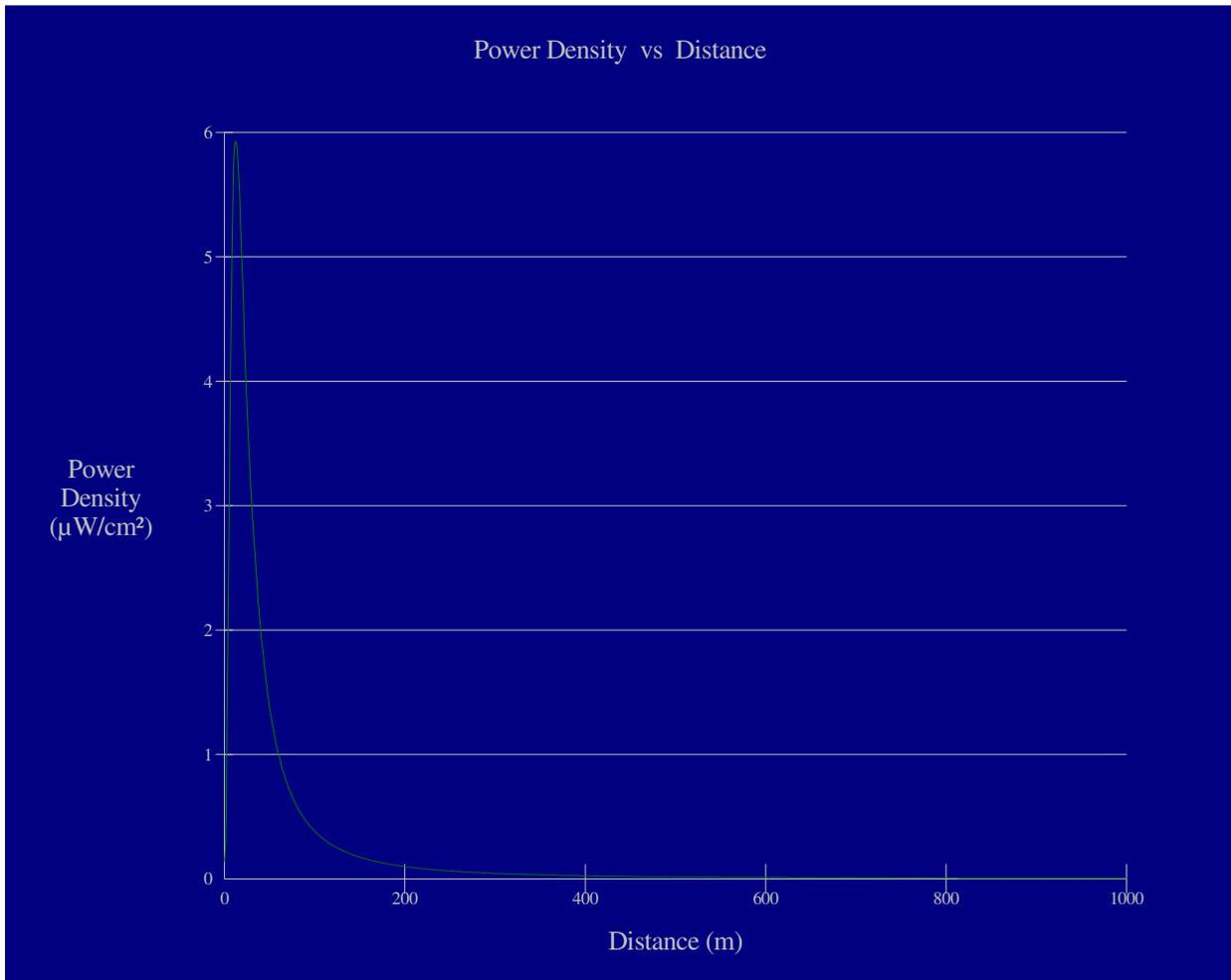
Calculations of the power density produced by the proposed K242AH antenna system assume a Type 6 element pattern, which is the element pattern for the Shively 6812B-1 antenna proposed for use. The highest calculated ground level power density occurs at a distance of 12 meters from the base of the antenna support structure. At this point the power density is calculated to be 5.9 $\mu W/cm^2$.

Calculations of the power density produced by K242AH and the other stations authorized and proposed at this transmitter site are summarized in the following table:

Call	Avg or Peak ERP Antenna Model	Relative Field	Height AGL	Calculated Max Exposure	Gen Pub FCC Limit	% of Limit
K238AE App	0.160 kW avg SCA FMV-1	FMMModel	17 m	22.6 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	11.3%
KXBX-FM 252A	4.8 kW avg JAM JMPC-4 HW	FMMModel	17 m	38.8 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	19.4%
K242AH 243D App	0.060 kW avg SHI 6812B-1	FMMModel	14 m	5.9 $\mu\text{W}/\text{cm}^2$	200 $\mu\text{W}/\text{cm}^2$	3.0%

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed operation of K238AE, K242AH (Ch 243D application) and the present operation of KXBX-FM (were their maxima to coincide, which they do not) is $67.3 \mu\text{W}/\text{cm}^2$, which is 33.7% of $200 \mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments).

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

K242AH Ch243 Clearlake

Antenna Type: Shively 6812B-1

No. of Elements: 1

Element Spacing: 1.0 wavelength

Distance: 1000 meters

Horizontal ERP: 0.060 kW

Vertical ERP: 0.060 kW

Antenna Height: 14 meters AGL

Maximum Calculated Power Density is 5.9 $\mu\text{W}/\text{cm}^2$ at 12 meters from the antenna structure.