

April 2015
FM Booster KUIC-FM2
Vallejo, California Channel 237D
Allocation Study

The instant application is being filed in order to modify the authorized facility of FM booster KUIC-FM2 at Vallejo, California. Contours in this application have been calculated using terrain data extracted from the 3-second terrain database.

The attached spacing study shows the spacing between the proposed booster 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 first-adjacent channel situations were examined to determine the lack of prohibited contour overlap per the requirements of §74.1204(i) of the Rules.

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.

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SEARCH PARAMETERS FM Database Date: 150424

Channel: 237A 95.3 MHz
 Latitude: 38 6 6
 Longitude: 122 16 19
 Safety Zone: 32 km
 Job Title: KUIC-FM2 VALLEJO

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KYLD-FM1 LIC	PLEASANTON CA	BLFTB-910201TB	235D 94.9	0.186 927.0	37-52-55 121-55-05	128.1	39.51 0.00	0 BOOST
KYLDaux LIC	SAN FRANCISCO CA	BLH-900104AC	235B 94.9	30.000 357.0	37-41-22 122-26-10	197.5	47.98 0.00	0 AUX
KYLD LIC	SAN FRANCISCO CA	BMLH-80403ACF	235B 94.9	30.000 369.0	37-41-22 122-26-10	197.5	47.98 -21.02	69 SHORT
KYLDaux CP	SAN FRANCISCO CA	BXPB-40808AAM	235B 94.9	9.000 390.0	37-41-17 122-26-07	197.4	48.10 0.00	0 AUX
KGGV-LP LIC	GUERNEVILLE CA	BMLL-70904AIU	236L1 95.1	0.100 -95.0	38-30-32 122-59-44	305.9	77.78 0.00	0 LPFM
K290AI CP	NATOMAS CA	BPFT-30328AEQ	236D 95.1	0.250 0.0	38-33-59 121-28-47	53.0	86.37 0.00	0 TRANS
KOZT LIC	FORT BRAGG CA	BLH-00925AAW	237B 95.3	35.000 157.0	39-24-24 123-44-04	319.3 SS	192.74 14.74	178 CLEAR
KRTY LIC	LOS GATOS CA	BMLH-930521KA	237A 95.3	0.870 262.0	37-12-17 121-56-56	164.0	103.55 -11.45	115 SHORT
KRTY-FM2 LIC	NEW ALMADEN CA	BLFTB-880713TF	237D 95.3	0.086 0.0	37-07-30 121-53-54	163.0	113.31 0.00	0 BOOST
KRTY-FM1 LIC	SCOTTS VALLEY, ETC. CA	BLFTB-871112TD	237D 95.3	0.100 709.9	37-09-50 121-55-02	163.2	108.69 0.00	0 BOOST
KUIC LIC	VACAVILLE CA	BLH-990608KA	237B1 95.3	0.490 617.0	38-23-44 122-05-56	24.8 SS	35.97 -107.03	143 SHORT
KUICaux LIC	VACAVILLE CA	BLH-990608KB	237B1 95.3	0.460 594.0	38-23-44 122-05-56	24.8	35.97 0.00	0 AUX
KUICaux LIC	VACAVILLE CA	BXMLH-50331ARU	237B1 95.3	0.435 594.0	38-23-42 122-05-57	24.8	35.90 0.00	0 AUX

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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)
KUIC-FM2VALLEJO LIC	CA	BLFTB-960111TF	237D 95.3	0.175 25.0	38-07-02 122-15-20	39.7	2.25 0.00	0 BOOST
KUIC-FM2VALLEJO APP	CA	BSTA-50106ABG	237D 95.3	0.050 0.0	38-06-05 122-16-22	247.0	0.08 0.00	0 BOOST
K238AY LIC	RIO LINDA CA	BLFT-70529ACH	238D 95.5	0.027 85.0	38-42-28 121-28-32	45.6	96.78 0.00	0 TRANS
K238AC LIC	SALIDA CA	BLFT-40627AAA	238D 95.5	0.010 867.0	37-30-30 121-22-26	129.6	102.92 0.00	0 TRANS
K238AF LIC	SANTA ROSA CA	BLFT-60627ABC	238D 95.5	0.240 449.0	38-30-31 122-39-41	323.2	56.58 0.00	0 TRANS
KGMZ LIC	SAN FRANCISCO CA	BMLH-930914KB	239B 95.7	6.900 393.0	37-41-23 122-26-12	197.6	47.96 -21.04	69 SHORT
KGMZaux LIC	SAN FRANCISCO CA	BXLH-71210ADB	239B 95.7	6.900 360.6	37-41-23 122-26-12	197.6	47.96 0.00	0 AUX
KGMZaux LIC	SAN FRANCISCO CA	BXMLH-80128AFO	239B 95.7	6.900 360.6	37-41-23 122-26-12	197.6	47.96 0.00	0 AUX
KGMZ-FM1WALNUT CREEK LIC	CA	BLFTB-20419AAT	239D 95.7	0.186 0.0	37-52-54 121-55-05	128.2	39.53 0.00	0 BOOST
KMELaux LIC	SAN FRANCISCO CA	BLH-910312KC	291B 106.1	8.600 371.0	37-41-23 122-26-12	197.6	47.96 0.00	0 AUX
KMEL LIC	SAN FRANCISCO CA	BMLH-10805AAO	291B 106.1	69.000 393.0	37-41-24 122-26-13	197.6	47.94 32.94	15 CLEAR
KMEL-FM2WALNUT CREEK LIC	CA	BLFTB-30408AAS	291D 106.1	6.500 0.0	38-01-48 122-00-04	108.5	25.06 0.00	0 BOOST

===== END OF FM SPACING STUDY FOR CHANNEL 237 =====

April 2015
FM Booster KUIC-FM2
Vallejo, California Channel 237D
RF Exposure Study

Facilities Proposed

The proposed booster operation will be on Channel 237D (95.3 MHz) with an effective radiated power of 50 watts. Operation is with an omnidirectional antenna attached to a pole which extends 6 feet above the mechanical penthouse of an existing building on Mare Island.

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.

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.

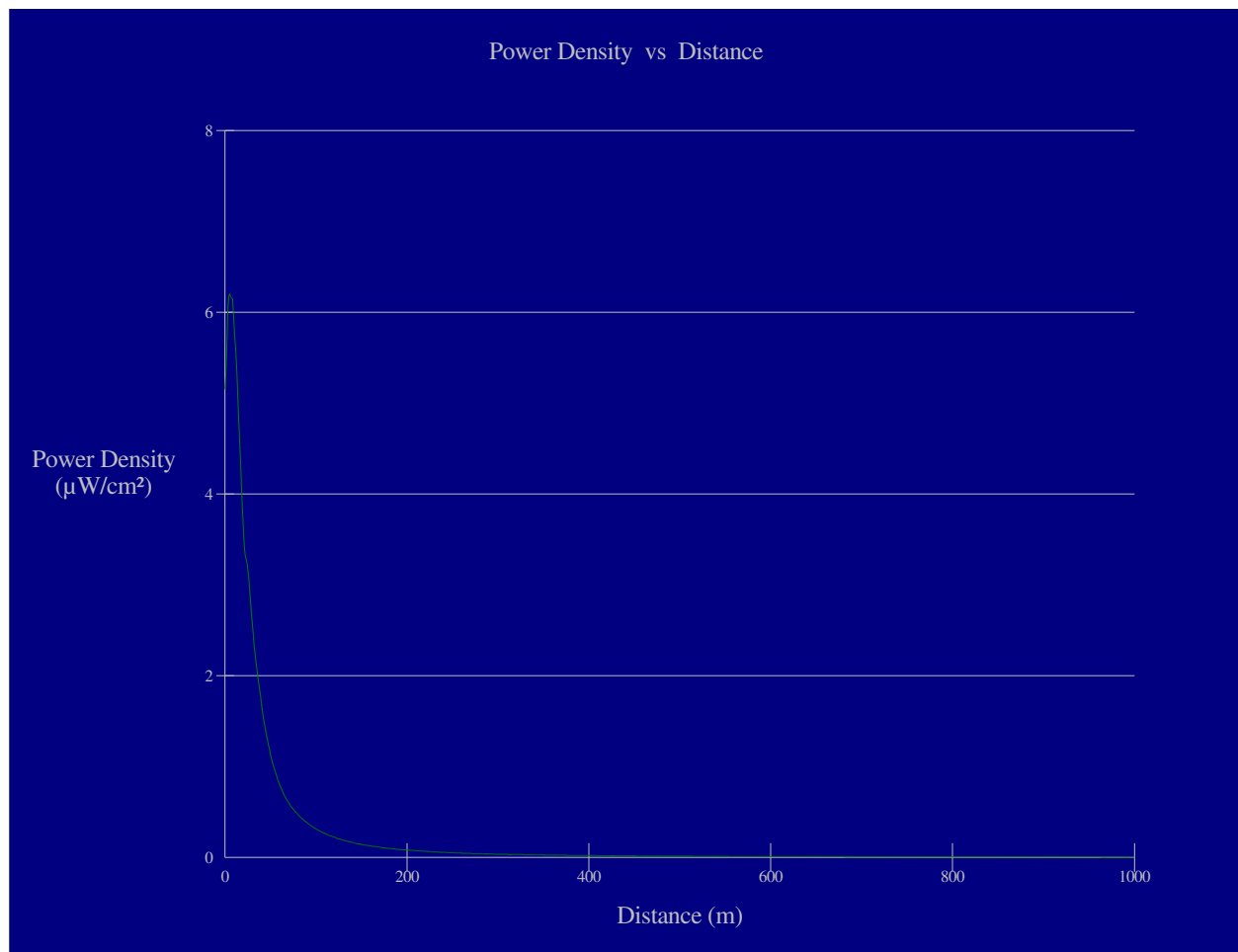
D is the distance in meters from the center of radiation to the calculation point.

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 antenna system assume a Type 1 element pattern, which is the element pattern for the Jampro JLST-1 ("ring stub") antenna proposed for use. The highest calculated ground level power density occurs at a distance of 5 meters from the base of the antenna support structure. At this point the power density is calculated to be 6.2 $\mu W/cm^2$, which is 3.1% of 200 $\mu W/cm^2$ (the FCC standard for uncontrolled environments).

The antenna will be installed on a metal pipe extending above a building rooftop, with the antenna radiation center located 6 feet above the roof of the mechanical penthouse. There is no public access to the main building rooftop, which is about 16 feet below the antenna's radiation center.

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

KUIC-FM2 Vallejo

Antenna Type: Jampro JLST-1 (ring stub)

No. of Elements: 1

Element Spacing: 1.0 wavelength

Distance: 1000 meters

Horizontal ERP: 50 W

Vertical ERP: 50 W

Antenna Height: 20 meters AGL

Maximum Calculated Power Density is $6.2 \mu\text{W}/\text{cm}^2$ at 5 meters from the antenna structure.

Hatfield & Dawson Consulting Engineers