

August 2009
FM Translator K232CX
Desert Hot Springs, CA 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. 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 proposed translator transmitter site is located within the 54 dBu protected contour of third-adjacent channel station **KCLB-FM 229B Coachella (license)**. The proposed site is 20.56 km from the KCLB-FM (license) transmitter site at a bearing of 290 degrees True. Given the KCLB-FM (license) antenna's 371 meter HAAT along this radial, KCLB-FM (license) places an 83.7 dBu contour at the translator transmitter site. The corresponding interfering contour from the translator is $83.7 + 40 = 123.7$ dBu. The attached map of the proposed transmitter site depicts the 123.7 dBu contour from the proposed facility, which extends just 45 meters from the antenna. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to KCLB-FM (license).

The proposed translator transmitter site is located within the 54 dBu protected contour of third-adjacent channel station **KCLB-FM 229B Coachella (CP)**. The proposed site is 19.05 km from the KCLB-FM (CP) transmitter site at a bearing of 268 degrees True. Given the KCLB-FM (CP) antenna's 526 meter HAAT along this radial, KCLB-FM (CP) places a 91.0 dBu contour at the translator transmitter site. The corresponding interfering contour from the translator is $91.0 + 40 = 131.0$ dBu. The 131.0 dBu contour from the proposed facility extends just 20 meters from the antenna. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to KCLB-FM (CP).

The proposed translator transmitter site is located within the 60 dBu protected contour of second-adjacent channel station **KLOB 234A Thousand Palms**. The translator will be located on the same tower as KLOB, so for the purposes of this study the proposed site is assumed to be located 0.1 km from the KLOB transmitter site. KLOB operates with a directional antenna having a minimum relative field value of 0.280, which corresponds to an ERP of 129 watts in the pattern minimum. According to a free-space calculation, KLOB places a 118 dBu contour at 0.1 km from the tower. The corresponding interfering contour from the translator is $118.0 + 40 = 158.0$ dBu. The 158.0 dBu contour from the proposed facility extends just 1 meter from the antenna. There is no population within this contour. Therefore, the proposed facility is believed to satisfy the requirements of §74.1204(d) with respect to KLOB.

The proposed facility will operate with an ERP of 99 watts. Therefore there are no spacing requirements to stations which are 53 or 54 channels removed from the proposed operation.

Mexican Border Zone

The licensed K232CX facility operates with 250 watts ERP and casts a large 34 dBu interfering contour, extending as much as 133 kilometers from the licensed transmitter site.

As depicted on the attached allocation study map, the 34 dBu interfering contour from the proposed facility will not extend beyond the licensed 34 dBu interfering contour at any azimuth in the direction of Mexico. While there is some extension to the southwest and northwest of the proposed transmitter site, there is no Mexican territory at those azimuths. Indeed along all azimuths in the direction of Mexico, the proposed 34 dBu interfering contour extends less far than does the licensed 34 dBu interfering contour.

It is therefore believed that it is not necessary to refer the instant application to Mexican authorities for concurrence prior to grant of a construction permit.

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SEARCH PARAMETERS FM Database Date: 090724

Channel: 232A 94.3 MHz Page 1

Latitude: 33 51 56

Longitude: 116 25 58

Safety Zone: 50 km

Job Title: K232CX AT EDOM

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KCLBaux LIC	COACHELLA CA	BXLH-40622ABJ	229B 93.7	3.600 100.0	33-47-45 116-13-19	111.6	20.99 0.00	0 AUX
KCLB-FM LIC	COACHELLA CA	BMLH-50802AAL	229B 93.7	26.500 197.0	33-48-07 116-13-27	110.1	20.56 -48.44	69 SHORT
KCLB-FM CP	COACHELLA CA	BPH-70307ABW	229B 93.7	50.000 116.0	33-52-15 116-13-37	88.2	19.05 -49.95	69 SHORT
NEW-T APP	CALIPATRIA CA	BNPFT-30317CKL	231D 94.1	0.055 65.0	33-07-19 115-30-18	133.6	119.31 0.00	0 TRANS
NEW-T APP	CALIPATRIA CA	BNPFT-30827ADF	231D 94.1	0.005 37.0	33-09-60 115-29-28	131.4	116.89 0.00	0 TRANS
KMYI LIC	SAN DIEGO CA	BLH-70411ACP	231B 94.1	77.000 210.0	32-50-20 117-14-56	213.8	136.88 23.88	113 CLEAR
KMYIaux LIC	SAN DIEGO CA	BXLH-60517AAY	231B 94.1	1.000 179.7	32-50-21 117-14-57	213.8	136.87 0.00	0 AUX
KDUCaux LIC	BARSTOW CA	BMLH-970616KB	232B1 94.3	3.000 -59.0	34-54-44 117-01-39	335.0	128.34 0.00	0 AUX
KDUC LIC	BARSTOW CA	BLH-911031KC	232B1 94.3	4.600 239.0	34-58-15 117-02-22	335.8	134.69 -8.31	143 SHORT
K232CX LIC	DESERT HOT SPRINGS CA	BLFT-940926TD	232D 94.3	0.250 1556.0	34-02-17 116-48-49	298.7	40.07 0.00	0 TRANS
KEBN LIC	GARDEN GROVE CA	BLH-41223ACE	232A 94.3	6.000 73.0	33-46-51 117-53-33	266.4	135.46 20.46	115 CLEAR
KJVA-LP LIC	SAN BERNARDINO CA	BLL-80225AHF	232L1 94.3	0.100 -66.0	34-09-32 117-18-52	292.1	87.70 20.70	67 CLEAR
KSEH LIC	BRAWLEY CA	BLH-20826AAQ	233B 94.5	50.000 92.0	32-54-40 115-31-40	141.4	135.26 22.26	113 CLEAR

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SEARCH PARAMETERS                               FM Database Date: 090724
Channel: 232A      94.3 MHz                      Page 2
Latitude: 33 51 56
Longitude: 116 25 58
Safety Zone: 50 km
Job Title: K232CX AT EDOM
    
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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)
KSEHaux LIC	BRAWLEY CA	BXMLH-20116AAL	233B 94.5	25.000 61.0	32-48-27 115-32-18	144.5	143.89 0.00	0 AUX
KMYT LIC	TEMECULA CA	BMLH-40301ABM	233A 94.5	0.540 235.0	33-28-51 117-10-58	238.6	81.60 9.60	72 CLOSE
KLOB LIC	THOUSAND PALMS CA	BLH-01020ABS	234A 94.7	1.650 DA 195.0	33-51-56 116-25-58	0.0 SS	0.00 -31.00	31 SHORT
K288DR CP	THOUSAND PALMS CA	BPFT-70913AAJ	286D 105.1	0.010 396.0	33-51-56 116-26-04	281.4	0.16 0.00	0 TRANS

44444 END OF FM SPACING STUDY FOR CHANNEL 232 44444

KDUC 232B1 Barstow
57 dBu F(50,50)

KJVA-LP 232L1 San Bernardino
60 dBu F(50,50)

ORANGE

RIVERSIDE

KEBN 232A Garden Grove
60 dBu F(50,50)

K232CX Proposed
37 dBu F(50,10)
40 dBu F(50,10)

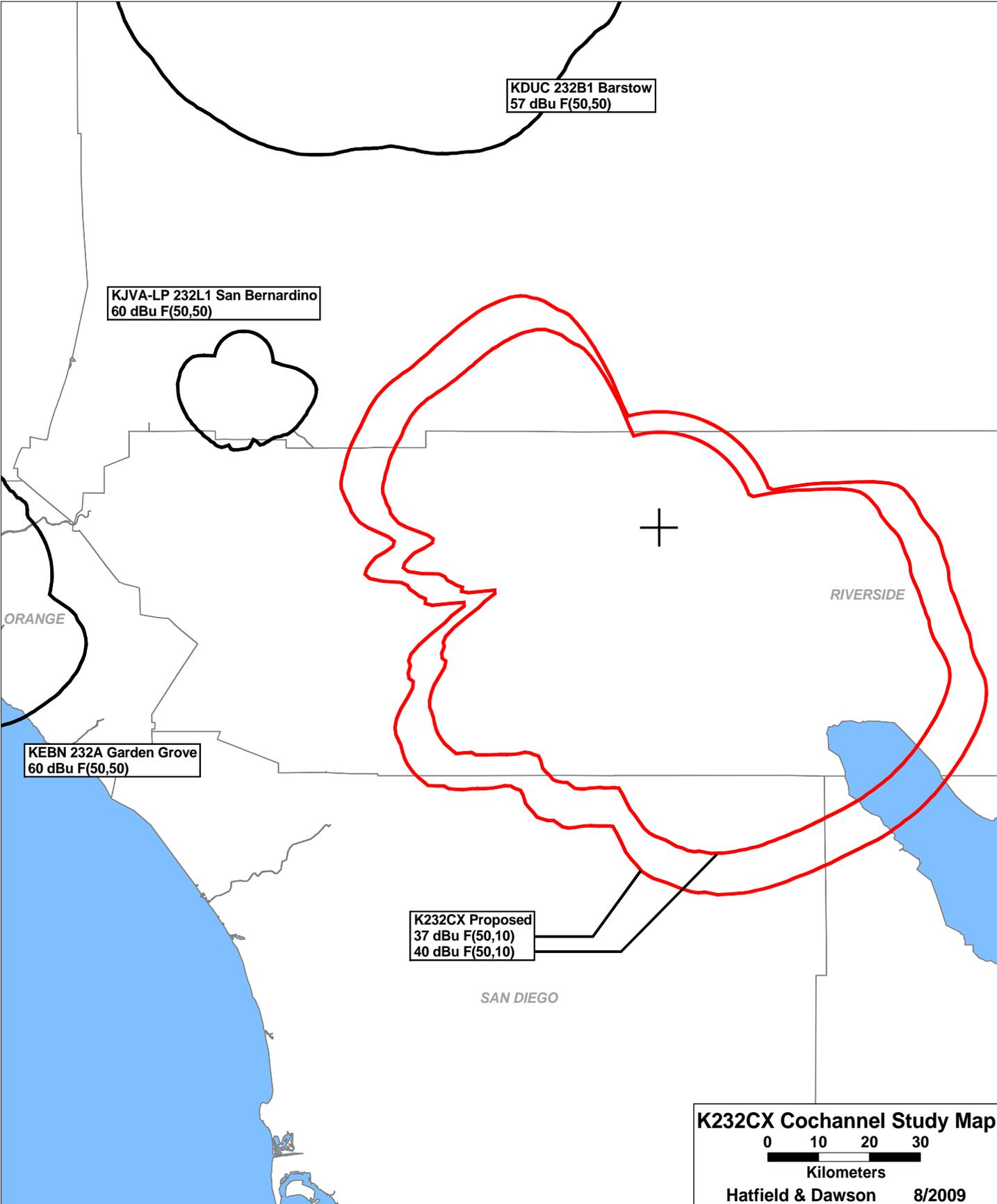
SAN DIEGO

K232CX Cochannel Study Map

0 10 20 30

Kilometers

Hatfield & Dawson 8/2009



SAN BERNARDINO

K232CX Proposed
48 dBu F(50,10)
54 dBu F(50,10)

RIVERSIDE

KMYT 233A Temecula
60 dBu F(50,50)

KMYI 231B San Diego
54 dBu F(50,50)

SAN DIEGO

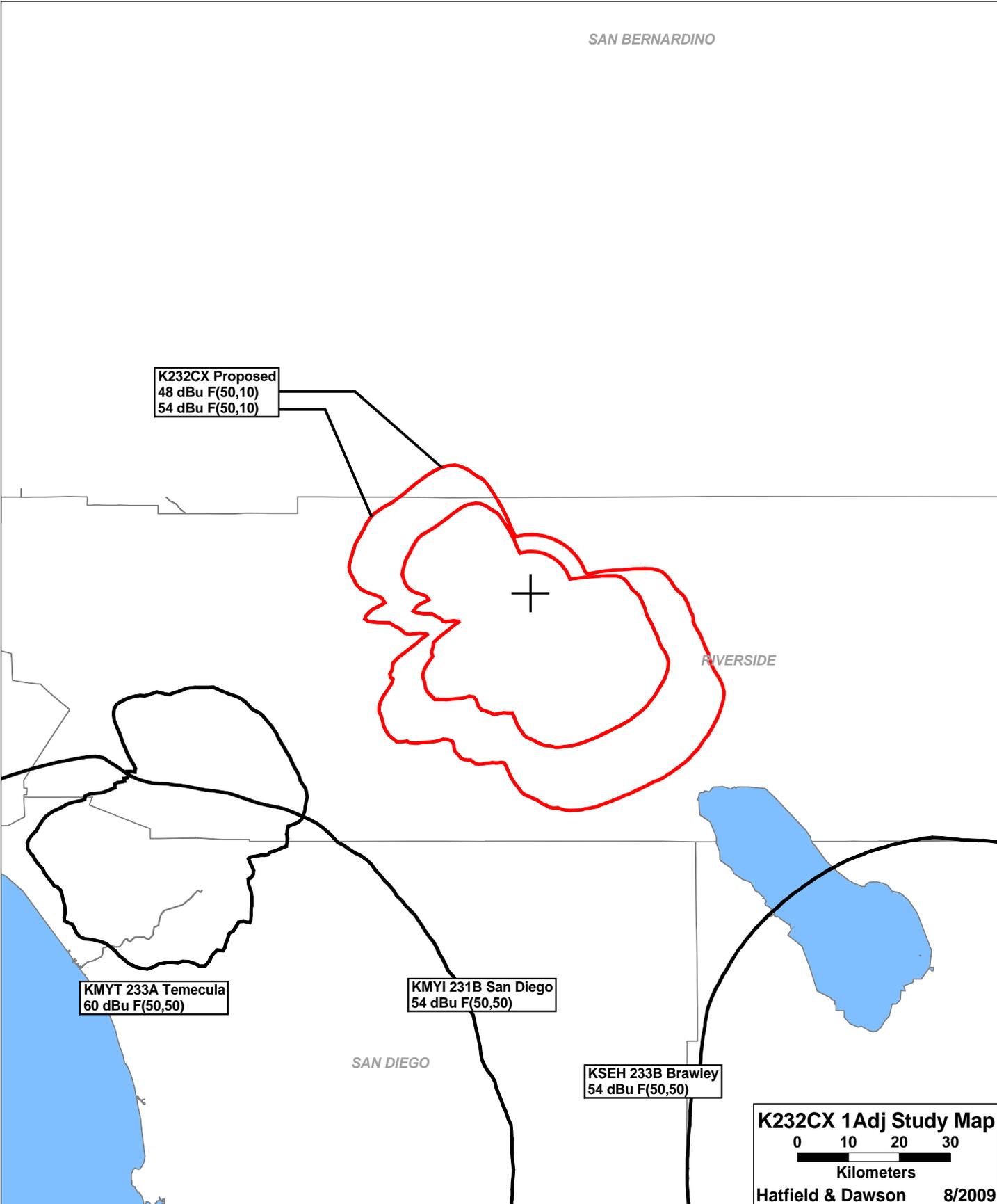
KSEH 233B Brawley
54 dBu F(50,50)

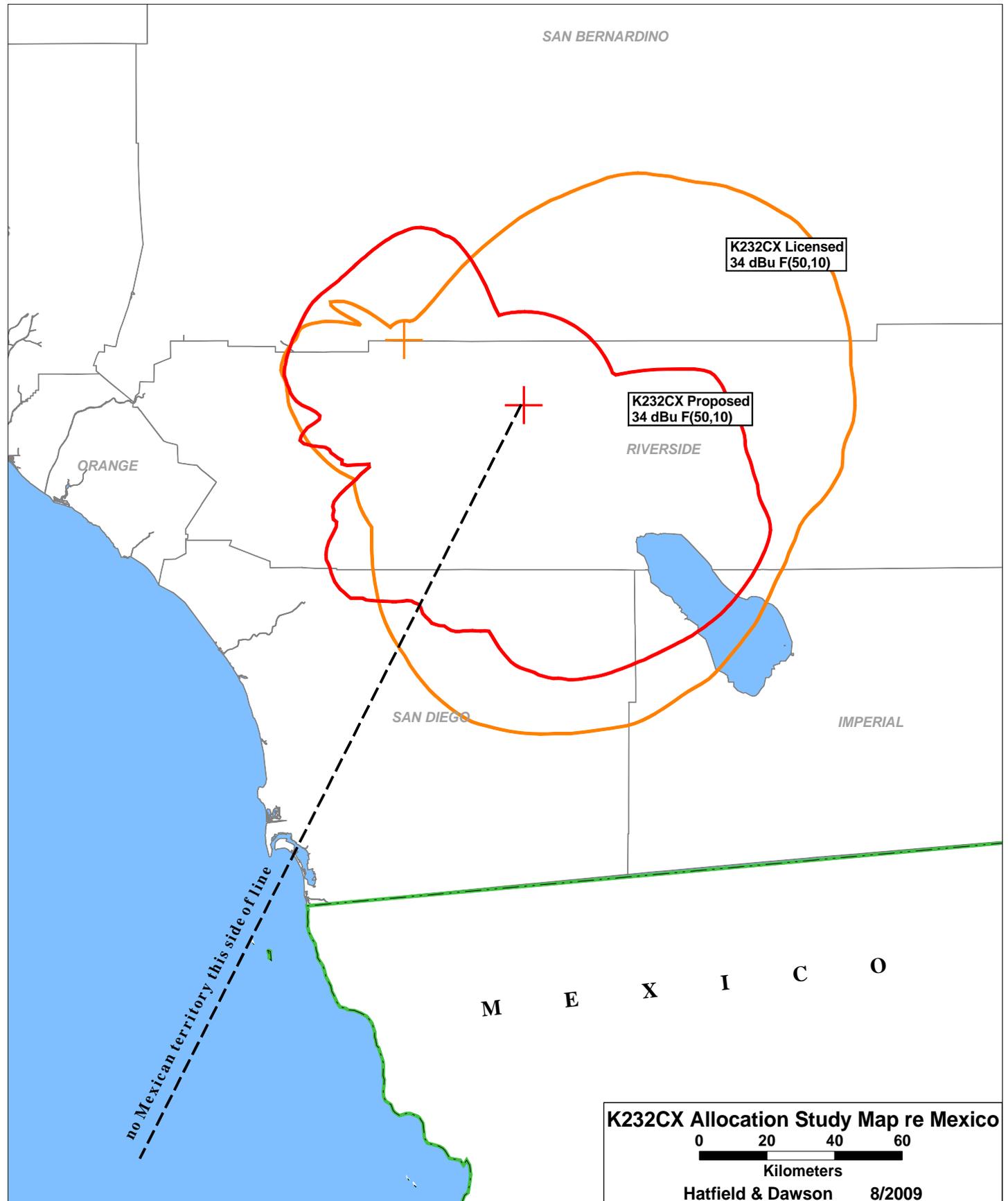
K232CX 1Adj Study Map

0 10 20 30

Kilometers

Hatfield & Dawson 8/2009





August 2009
FM Translator K232CX
Desert Hot Springs, CA Channel 232D
NIER Study

Facilities Proposed

The proposed operation will be on Channel 232D (94.3 MHz) with an effective radiated power of 99 Watts. Operation is proposed with an antenna to be mounted on an existing tower on Edom Hill.

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.

NIER Calculations

Section 1.1307(b)(1) of the Commission's Rules exempts FM translators and boosters operating with an effective radiated power of 100 Watts or less from the requirement to submit an Environmental Assessment to determine compliance with FCC specified guidelines for human exposure to radiofrequency radiation. The applicant proposes operation with a maximum lobe effective radiated power of 99 Watts and therefore no calculations are required. Nevertheless, the following calculation has been submitted on the advice of Commission staff, and in the interests of a complete record.

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.

$$S(mW / cm^2) = \frac{33.40981 \times AdjERP(Watts)}{D^2}$$

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.

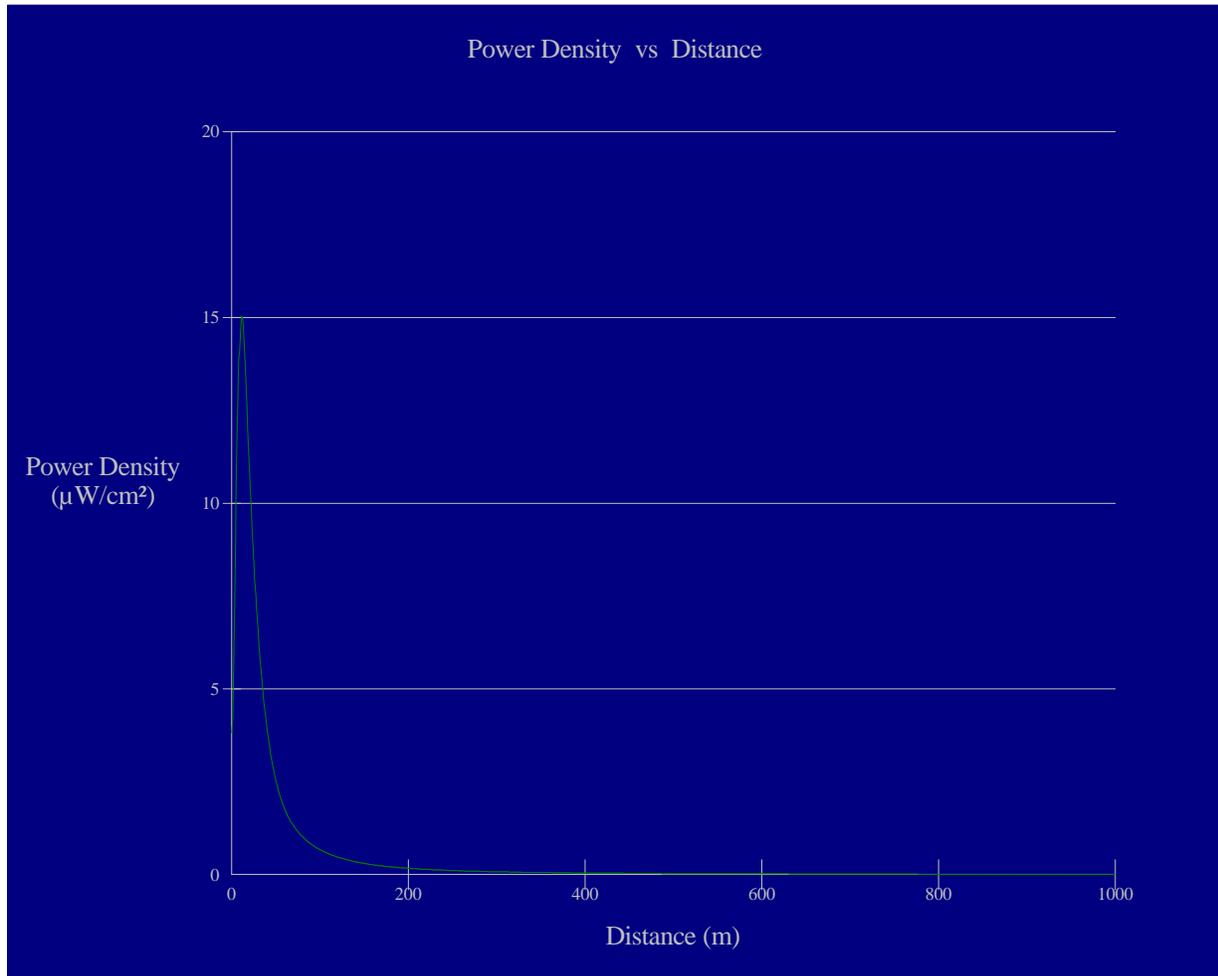
Ground level power densities have been calculated for locations extending from the base of the tower to a distance of 1000 meters. Values past this point are increasingly negligible.

Calculations of the power density produced by the proposed antenna system assume a Type 2 element pattern, which is the element pattern for the Jampro "double V" antenna proposed for use. The highest calculated ground level power density occurs at a distance of 11 meters from the base of the antenna support structure. At this point the power density is calculated to be 15.0 μ W/cm², which is 1.5% of 1000 μ W/cm² (the FCC standard for controlled environments) and 7.5% of 200

$\mu\text{W}/\text{cm}^2$ (the FCC standard for uncontrolled environments).

The Edom Hill transmitter site is a multiple-user site. Simple summation of the maxima from all broadcast stations operating at this site (as if all maxima coincided, which they do not) would produce a worst-case result which exceeds the FCC standard for uncontrolled environments. The stations at this site, however, operate from numerous individual tower locations. If the Commission so requires, the licensee will conduct post-construction measurements as a condition of licensing.

Public access to the tower site is restricted by a locked gate. Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken.



Ground-Level NIER

OET FMModel

K232CX Desert Hot Springs

Antenna Type: Jampro JLLP-1
 No. of Elements: 1
 Element Spacing: dna

Distance: 1000 meters
 Horizontal ERP: 0.099 kW
 Vertical ERP: 0.099 kW

Antenna Height: 13 meters AGL

Maximum Power Density is 15.0 : W/cm^2 at 11 meters from the antenna structure.