

April 2013
FM Translator K290AG
Stockton, California Channel 290D
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 maps demonstrate 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.

SEARCH PARAMETERS

FM Database Date: 130422

Channel: 290A 105.9 MHz
 Latitude: 37 57 30
 Longitude: 121 16 55
 Safety Zone: 50 km
 Job Title: K290AG AT KYCC

Page 1

Call Status	City St	FCC File No.	Channel Freq.	ERP(kW) HAAT(m)	Latitude Longitude	Bearing deg-True	Dist (km)	Req (km)
KITS-FM4 LIC	ANTIOCH CA	BLFTB-950522TE	287D 105.3	0.330 DA -18.0	37-59-19 121-48-18	274.4	46.08 0.00	0 BOOST
KITS-FM2 LIC	PLEASANTON CA	BLFTB-860619TN	287D 105.3	0.044 0.0	37-44-18 121-59-38	248.8	67.25 0.00	0 BOOST
KITSaux LIC	SAN FRANCISCO CA	BLH-930707KA	287B 105.3	16.500 329.0	37-41-20 122-26-07	253.9	105.86 0.00	0 AUX
KITS LIC	SAN FRANCISCO CA	BLH-6240	287B 105.3	15.000 366.0	37-41-20 122-26-07	253.9	105.86 36.86	69 CLEAR
KITS-FM1 LIC	WALNUT CREEK CA	BLFTB-890112TF	287D 105.3	0.610 0.0	37-54-11 122-04-29	265.2	69.97 0.00	0 BOOST
KRVR LIC	COPPEROPOLIS CA	BMLH-10607AAX	288A 105.5	1.000 238.0	37-56-55 120-42-16	91.0	50.77 19.77	31 CLEAR
K289AS LIC	COTATI CA	BLFT-80917ADU	289D 105.7	0.010 DA 544.0	38-19-56 122-35-40	290.3	122.31 0.00	0 TRANS
K289AS CP	NAPA CA	BPFT-00824ABP	289D 105.7	0.250 DA 548.0	38-19-56 122-35-40	290.3	122.31 0.00	0 TRANS
KVVF LIC	SANTA CLARA CA	BMLH-930914KG	289B 105.7	50.000 152.0	37-21-32 121-45-22	212.2	78.59 -34.41	113 SHORT
K289AJ LIC	WEST POINT CA	BLFT-31124AAB	289D 105.7	0.250 DA 0.0	38-18-07 120-19-08	65.3	92.65 0.00	0 TRANS
KOZZ-FM LIC	RENO NV	BLH-10103AAL	289C 105.7	25.000 893.0	39-18-48 119-52-59	38.4 SS	193.55 28.55	165 CLEAR
KMJ-aux LIC	FRESNO CA	BMLH-70223AEK	290B 105.9	1.000 590.0	37-04-30 119-25-52	120.5	190.75 0.00	0 AUX
KMJ-aux LIC	FRESNO CA	BXLH-60831ABD	290B 105.9	1.000 590.0	37-04-29 119-25-52	120.5	190.77 0.00	0 AUX
KMJ-FM LIC	FRESNO CA	BLH-791203AF	290B 105.9	2.400 597.0	37-04-23 119-25-51	120.5	190.88 12.88	178 CLEAR

SEARCH PARAMETERS

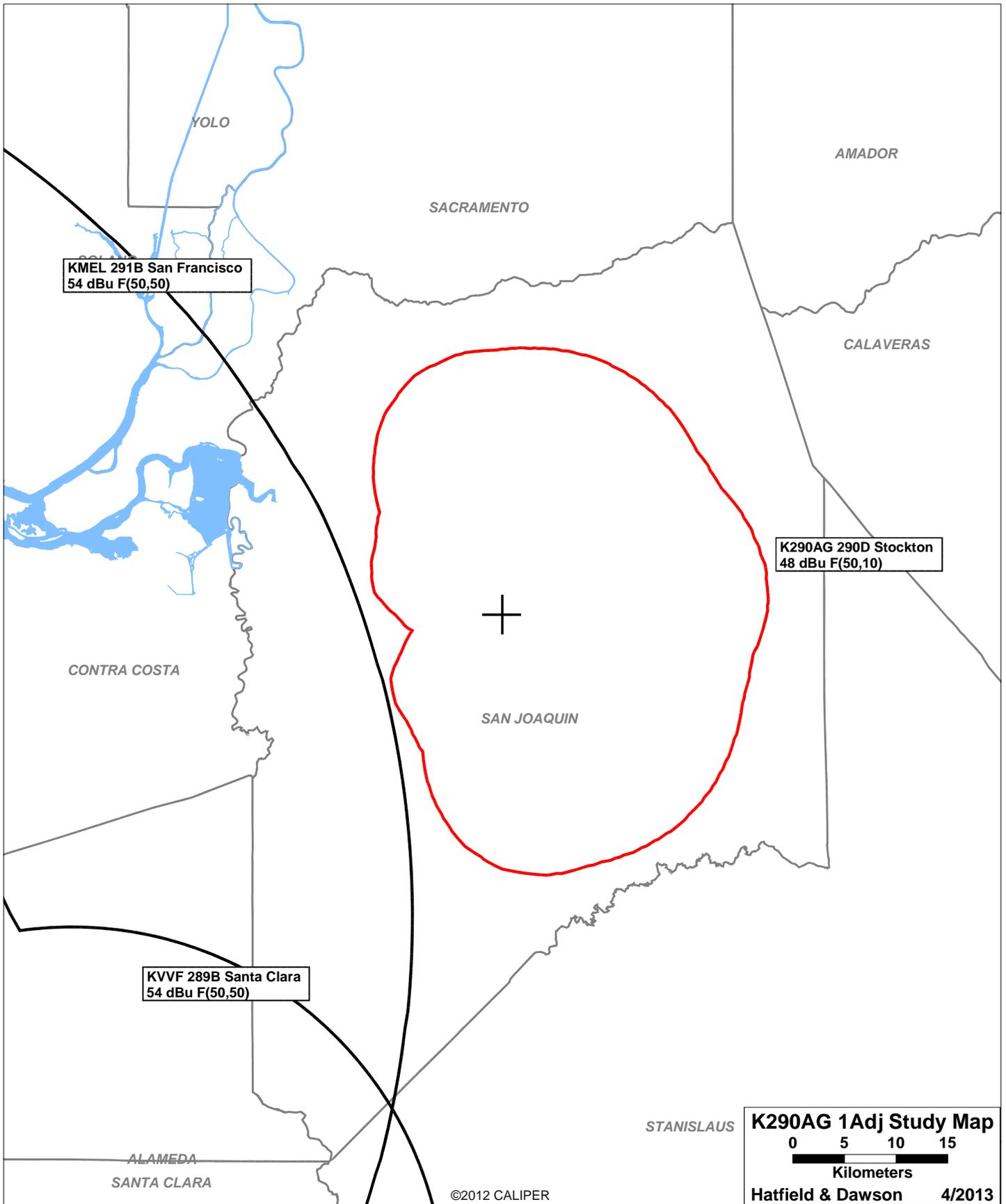
FM Database Date: 130422

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Page 2

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K290AI LIC	NATOMAS CA	BLFT-51019ABF	290D 105.9	0.005 92.0	38-33-59 121-28-47	345.7	69.68 0.00	0 TRANS
K290AG LIC	STOCKTON CA	BLFT-980205TF	290D 105.9	0.100 36.0	37-57-24 121-17-15	249.2	0.52 0.00	0 TRANS
KQPM LIC	UKIAH CA	BLH-890324KB	290B 105.9	1.900 615.0	39-07-50 123-04-32	310.4	203.43 25.43	178 CLEAR
KCFA LIC	ARNOLD CA	BLH-21007ABF	291B1 106.1	3.800 257.0	38-22-40 120-11-33	63.6	106.22 10.22	96 CLEAR
KMELaux LIC	SAN FRANCISCO CA	BLH-910312KC	291B 106.1	8.600 371.0	37-41-23 122-26-12	253.9	105.95 0.00	0 AUX
KMEL LIC	SAN FRANCISCO CA	BMLH-10805AAO	291B 106.1	69.000 393.0	37-41-24 122-26-13	254.0	105.96 -7.04	113 SHORT
KMEL-FM2 LIC	WALNUT CREEK CA	BLFTB-30408AAS	291D 106.1	6.500 DA 0.0	38-01-48 122-00-04	277.4	63.67 0.00	0 BOOST
KBZC LIC	SACRAMENTO CA	BLH-830216AD	293B 106.5	50.000 125.0	38-38-30 121-05-25	12.4	77.68 8.68	69 CLOSE
KEZR LIC	SAN JOSE CA	BLH-80625ABG	293B 106.5	42.000 DA 163.0	37-12-32 121-46-27	207.6	93.86 24.86	69 CLEAR

===== END OF FM SPACING STUDY FOR CHANNEL 290 =====



KMEL 291B San Francisco
54 dBu F(50,50)

K290AG 290D Stockton
48 dBu F(50,10)

KVVF 289B Santa Clara
54 dBu F(50,50)

K290AG 1Adj Study Map

0 5 10 15



Kilometers

Hatfield & Dawson 4/2013

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April 2013
FM Translator K290AG
Stockton, California Channel 290D
RF Exposure Study

Facilities Proposed

The proposed operation will be on Channel 290D (105.9 MHz) with a maximum lobe effective radiated power of 250 watts. Operation is proposed with an antenna to be mounted on an existing tower having FCC Antenna Structure Registration Number 1064433.

RF Exposure Calculations

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . .For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed operation of K290AG will produce less than 5% of the applicable exposure limit for both controlled and uncontrolled environments. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

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 K290AG antenna system have been made assuming that the antenna will radiate 100% power straight down to a point 2 meters above ground

at the base of the tower (97 meters below the antenna). Under this worst-case assumption, the highest calculated ground level power density from K290AG occurs at the base of the antenna support structure. At this point the power density is calculated to be $1.8 \mu\text{W}/\text{cm}^2$, which is 0.2% of $1000 \mu\text{W}/\text{cm}^2$ (the FCC standard for controlled environments) and 0.9% of $200 \mu\text{W}/\text{cm}^2$ (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 of K290AG alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants 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 radiation in excess of FCC guidelines.