

**Broadcast Engineering Services of Bonny Doon, Inc.**

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**Engineering Statement in support of a Minor Change  
KZSC Santa Cruz, California  
BLED-20070727AGI**

The Regents of the University of California (UC), licensee of KZSC, are requesting a minor change to KZSC (BLED-20070727AGI). UC proposes to modify the existing directional antenna pattern to better serve the regional population.

Because of the elimination of analog TV Channel 6 (particularly KVIE(TV) in Sacramento, California), the protection required previously is no longer needed. UC proposes to continue to use the existing three-bay circularly polarized directional antenna system on the existing tower, but modified by the manufacturer to re-shape the directional pattern.

The tower is 34 meters in height, and the radiation center above mean sea level will remain 277 meters, and recalculated as 140.3 meters above average terrain. The ground elevation is 253 meters above sea level. The existing and proposed center of the antenna array is 24 meters above ground. The existing and proposed antenna system is a Shively 6810-3-.9SS-DA, 3 sections, incorporating a .9 wavelength spaced design. This antenna will produce a calculated worst-case RFR energy field of 116.72 microwatts per squared centimeter at a distance of 9.6 meters from the base of the tower support structure. This is just under 59 % of the public limit, and is therefore compliant with the FCC rules concerning RFR both on and adjacent to the proposed tower location. Because the effective radiated power, antenna system, and height above ground are unchanged from the licensed facilities, the previous RFR measurement study (conducted in August of 2007) should remain valid. This study found no areas in or around the tower facilities that exceeded the public limit of 200 microwatts per squared centimeter. Precautions and procedures have been formulated to deal with workers involved in tower and antenna maintenance, thereby maintaining compliance with the limits imposed by the Federal Standard, as well as the restrictions imposed by the KZSC license, which states, in part:

*6. 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 electromagnetic fields in excess of FCC guidelines.*

Proper RF Warning signs and a list of procedures for tower maintenance are posted on site, and should be sufficient to satisfy the Federal Regulations concerning the controlled/occupied standards.

An allocation study for Ch. 201 was performed to verify clearances to other authorized facilities surrounding the proposed site. The modified directional pattern results in no overlap to any existing or proposed facilities.

UC is ready to construct the facility with these specified changes. Once this modification is granted, construction will commence on the transmission facilities and will be completed well within the time limitations imposed by the construction permit.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'D. Mussell Jr.', with a stylized, cursive flourish extending to the right.

Donald E. Mussell Jr. NCE-CBT  
Consulting Engineer  
February 24, 2012

Don Mussell Consulting Engineer  
Broadcast Engineering Services of Bonny Doon, Inc.

KZSC Proposed Minor Change  
The Regents Of The University Of California  
CH# 201B - 88.1 MHz, Pwr= 20 kW DA, HAAT= 140.3 M, COR= 277 M  
Average Protected F(50-50)= 41.85 km  
Standard Directional

DISPLAY DATES  
DATA 02-23-12  
SEARCH 02-23-12

REFERENCE  
37 00 10.0 N.  
122 03 04.0 W.

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
201B Santa Cruz	KZSC	LIC DCX CA		0.0 0.0	0.0 BLED20070727AGI	37 00 10.0 122 03 04.0	20.000 133	63.4 277	18.7 The Regents Of The Univers	-93.9*	-117.4*
201B Sacramento	KEAR-FM	LIC _V_ CA		19.1 199.5	146.4 BLED19970602KC	38 14 50.0 121 30 03.0	8.400 303	117.9 305	48.8 Family Stations, Inc.	0.2	1.9
203B San Francisco	KQED-FM	LIC _C_ CA		336.1 155.8	83.6 BLED19971124KD	37 41 23.0 122 26 13.0	110.000 387	11.9 432	79.8 Northern California Public	36.5	0.7
202B Coalinga	KDKL	LIC DV_ CA		118.9 299.7	144.1 BLED20001221ABA	36 22 11.0 120 38 37.0	1.400 717	62.0 1623	35.1 Educational Media Foundati	33.2	20.9
201B Fresno	KFCF	LIC _CN CA		87.3 268.9	233.3 BLED19800318AE	37 04 23.0 119 25 51.0	2.400 579	142.9 1409	62.7 Fresno Free College Founda	40.8	48.9

Terrain database is FCC NGDC 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference zone= - Zone 1A, Co to 3rd adjacent.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside protected contour.  
« = Station meets FCC minimum distance spacing for its class.

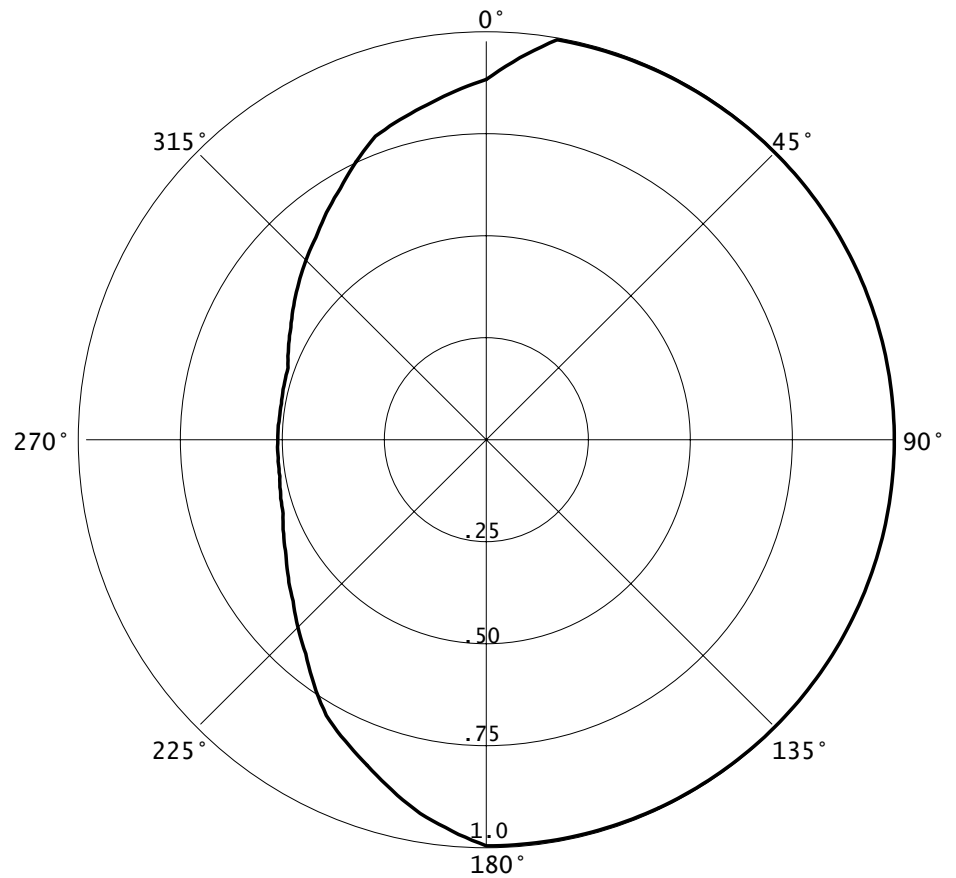
KZSC

02-23-2012

RMS(V)= .857

Graph is Relative Field

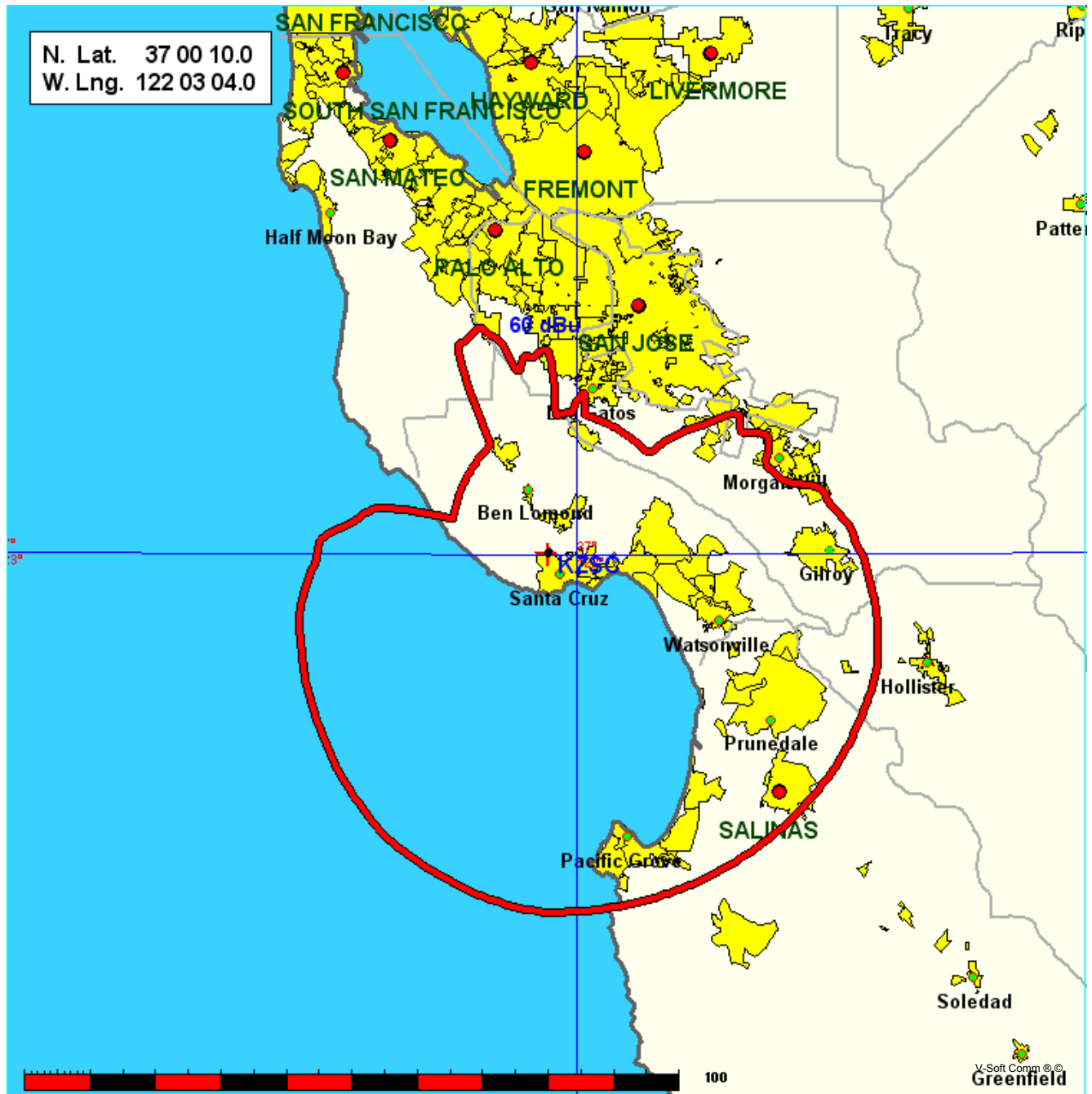
Azi	Field	dBk	kw
000	0.887	11.969	15.735
010	1.000	13.010	20.000
020	1.000	13.010	20.000
030	1.000	13.010	20.000
040	1.000	13.010	20.000
050	1.000	13.010	20.000
060	1.000	13.010	20.000
070	1.000	13.010	20.000
080	1.000	13.010	20.000
090	1.000	13.010	20.000
100	1.000	13.010	20.000
110	1.000	13.010	20.000
120	1.000	13.010	20.000
130	1.000	13.010	20.000
140	1.000	13.010	20.000
150	1.000	13.010	20.000
160	1.000	13.010	20.000
170	1.000	13.010	20.000
180	1.000	13.010	20.000
190	0.934	12.417	17.447
200	0.853	11.629	14.552
210	0.784	10.897	12.293
220	0.688	09.762	9.467
230	0.618	08.830	7.638
240	0.567	08.082	6.430
250	0.530	07.496	5.618
260	0.514	07.230	5.284
270	0.511	07.179	5.222
280	0.510	07.162	5.202
290	0.517	07.280	5.346
300	0.553	07.865	6.116
310	0.600	08.573	7.200
320	0.650	09.269	8.450
330	0.715	10.096	10.224
340	0.795	11.018	12.641
350	0.837	11.465	14.011



KZSC Proposed 60 dbu  
The Regents Of The University Of California

Coverage Study - FCC NGDC 30 Sec  
02-23-2012

KZSC CH201 B , 20.0 kW, 140.3M HAAT, 277.0M COR AMSL  
Service Contour = 60 dBu. Population = 649,077

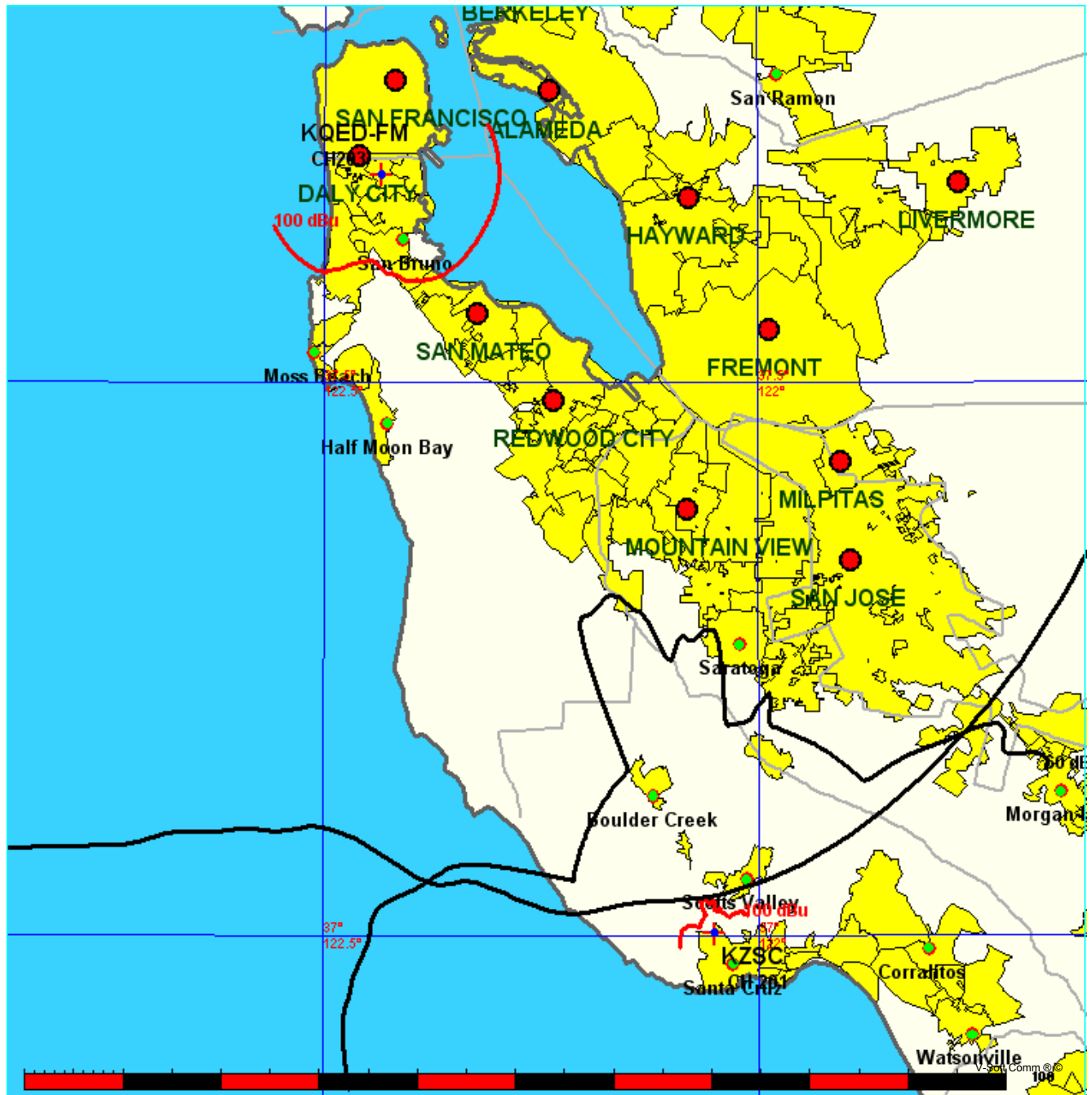


KZSC - KQED  
The Regents Of The University Of California

FMCommander Single Allocation Study - 02-23-2012 - FCC NGDC 30 Sec  
KZSC's Overlaps (In= 36.55 km, Out= 0.72 km)

KZSC CH 201 B DA  
Lat= 37 00 10.0, Lng= 122 03 04.0  
20.0 kW 140.3 M HAAT, 277 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

KQED-FM CH 203 B BLED19971124KD  
Lat= 37 41 23.0, Lng= 122 26 13.0  
110.0 kW 387 M HAAT, 432 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

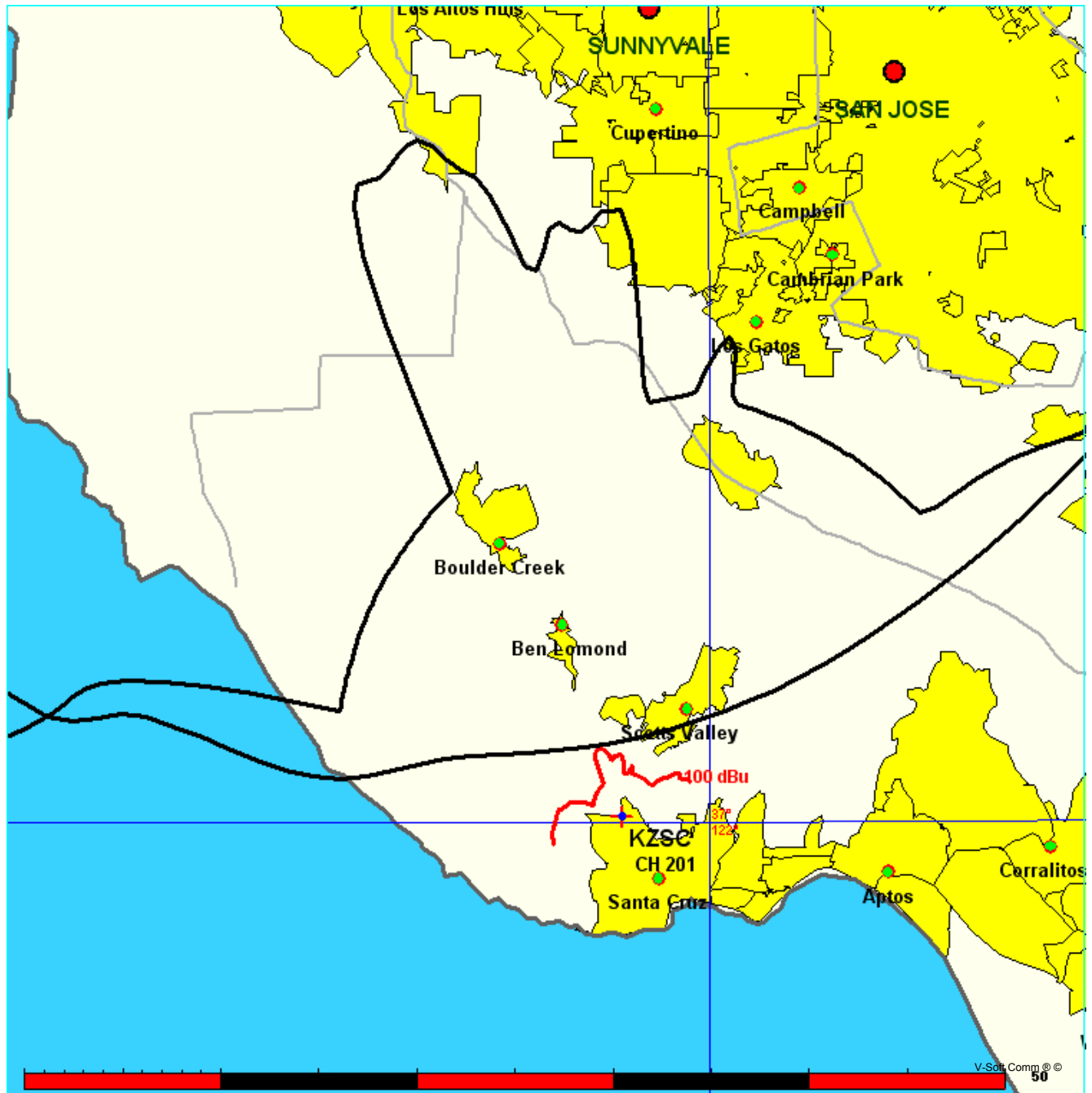


KZSC - KQED Detail Map  
The Regents Of The University Of California

FMCommander Single Allocation Study - 02-23-2012 - FCC NGDC 30 Sec  
KZSC's Overlaps (In= 36.55 km, Out= 0.72 km)

KZSC CH 201 B DA  
Lat= 37 00 10.0, Lng= 122 03 04.0  
20.0 kW 140.3 M HAAT, 277 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

KQED-FM CH 203 B BLED19971124KD  
Lat= 37 41 23.0, Lng= 122 26 13.0  
110.0 kW 387 M HAAT, 432 M COR  
Prot.= 60 dBu, Intef.= 100 dBu

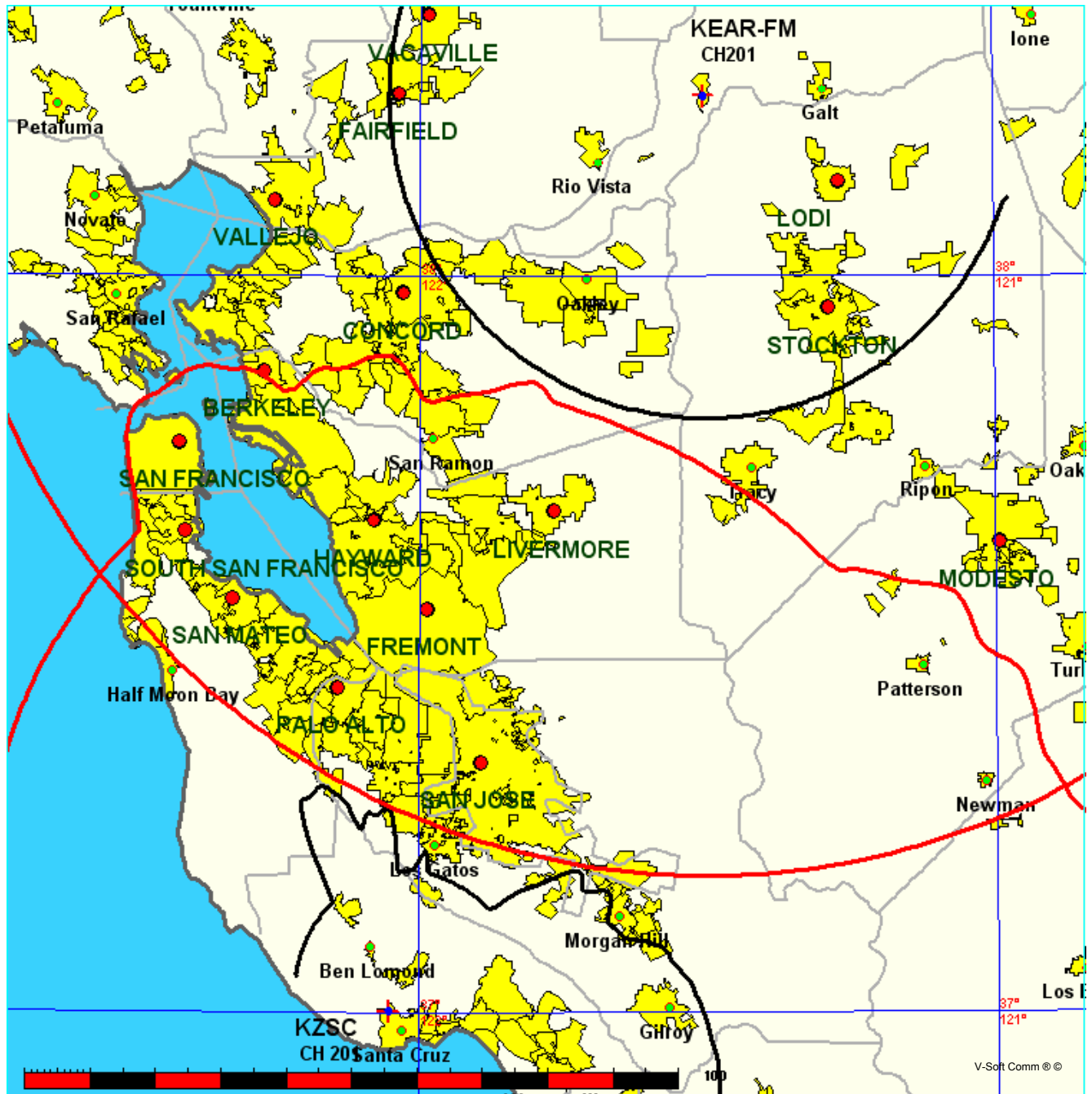


KZSC - KEAR  
The Regents Of The University Of California

FMCommander Single Allocation Study - 02-23-2012 - FCC NGDC 30 Sec  
KZSC's Overlaps (In= 0.21 km, Out= 1.86 km)

KZSC CH 201 B DA  
Lat= 37 00 10.0, Lng= 122 03 04.0  
20.0 kW 140.3 M HAAT, 277 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

KEAR-FM CH 201 B BLED19970602KC  
Lat= 38 14 50.0, Lng= 121 30 03.0  
8.4 kW 303 M HAAT, 305 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



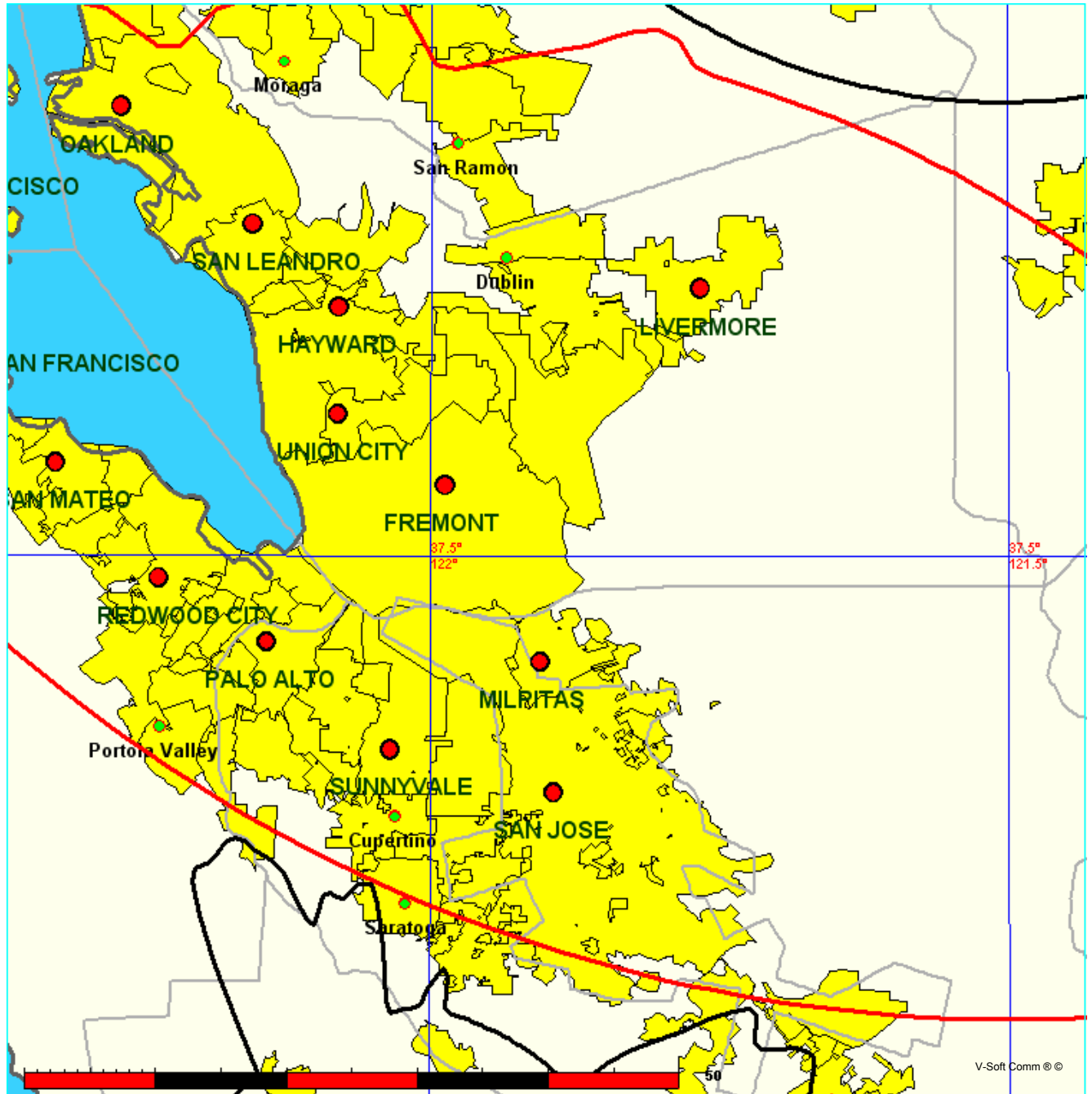


KZSC - KEAR Detail Map  
The Regents Of The University Of California

FMCommander Single Allocation Study - 02-23-2012 - FCC NGDC 30 Sec  
KZSC's Overlaps (In= 0.21 km, Out= 1.86 km)

KZSC CH 201 B DA  
Lat= 37 00 10.0, Lng= 122 03 04.0  
20.0 kW 140.3 M HAAT, 277 M COR  
Prot.= 60 dBu, Intef.= 40 dBu

KEAR-FM CH 201 B BLED19970602KC  
Lat= 38 14 50.0, Lng= 121 30 03.0  
8.4 kW 303 M HAAT, 305 M COR  
Prot.= 60 dBu, Intef.= 40 dBu



State of Hawaii )  
Kilauea )  
County of Kauai )

That he is recognized as a Broadcast Technologist by the Society of Broadcast Engineers, License # 22301, and a member of the Society of Broadcast Engineers since 1980;

That he has submitted many applications to the Federal Communications Commission for broadcast and auxiliary broadcast construction permits and licenses, and that his experience in Radio and Television broadcast engineering extends over four decades;.



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February 24, 2012