Wiley Rein LLP

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#4118

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November 26, 2012

Mark N. Lipp
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BY HAND DELIVERY

FILED/ACCEPTED

NOV 26 2012

Federal Communications Commission
Office of the Secretary

Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

Re: **Amendment to Application for AM Broadcast Station License Using Method of Moments Model**
Multicultural Radio Broadcasting Licensee, LLC
Station KSJX(AM), San Jose, California
Facility Identifier Number 4118
File Number BMML-20121003ACV

0010215812

Dear Ms. Dortch:

Transmitted herewith on behalf of Multicultural Radio Broadcasting Licensee, LLC ("Multicultural"), the licensee of Station KSJX(AM), is an amendment to its license application referred to above. This amendment is responsive to e-mail communication from a member of the Audio Division staff.

If there are any questions about this Amendment, please contact undersigned counsel to Multicultural Radio Broadcasting Licensee, LLC.

Sincerely,

Mark N. Lipp

Enclosure

cc: Mr. Edward Lubetzky, Audio Division, Media Bureau, FCC

13525225.1

FILED/ACCEPTED

Federal Communications Commission
Washington, D. C. 20554

Approved by OMB
3060-0627
Expires 01/31/98

FOR FCC USE ONLY

NOV 26 2012
Federal Communications Commission
Office of the Secretary

FCC 302-AM
APPLICATION FOR AM BROADCAST STATION LICENSE

(Please read instructions before filling out form.

FOR COMMISSION USE ONLY

FILE NO.

SECTION I - APPLICANT FEE INFORMATION

1. PAYOR NAME (Last, First, Middle Initial)

Multicultural Radio Broadcasting Licensee, LLC

MAILING ADDRESS (Line 1) (Maximum 35 characters)
27 William Street, 11th Floor

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
New York	New York	10005

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
212.431.4300	KSJX	4118

2. A. Is a fee submitted with this application? ☐ Yes ☑ No

B. If No, indicate reason for fee exemption (see 47 C.F.R. Section

☐ Governmental Entity ☐ Noncommercial educational licensee ☑ Other (Please explain): Amendment

C. If Yes, provide the following information:

Enter in Column (A) the correct Fee Type Code for the service you are applying for. Fee Type Codes may be found in the "Mass Media Services Fee Filing Guide." Column (B) lists the Fee Multiple applicable for this application. Enter fee amount due in Column (C).

(A) FEE TYPE CODE	(B) FEE MULTIPLE	(C) FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
	0001	$	

To be used only when you are requesting concurrent actions which result in a requirement to list more than one Fee Type Code.

(A)	(B)	(C)	FOR FCC USE ONLY
	0001	$	

ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.	TOTAL AMOUNT REMITTED WITH THIS APPLICATION	FOR FCC USE ONLY
	$	

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Multicultural Radio Broadcasting Licensee, LLC		
MAILING ADDRESS 27 William Street, 11th Floor		
CITY New York	STATE New York	ZIP CODE 10005

2. This application is for:

☑ Commercial ☐ Noncommercial

☐ AM Directional ☐ AM Non-Directional

Call letters	Community of License	Construction Permit File No.	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit
KSJX	San Jose, CA	N/A	N/A	N/A

3. Is the station now operating pursuant to automatic program test authority in accordance with 47 C.F.R. Section 73.1620?

☐ Yes ☐ No

If No, explain in an Exhibit.

Exhibit No. N/A

4. Have all the terms, conditions, and obligations set forth in the above described construction permit been fully met?

☐ Yes ☐ No

If No, state exceptions in an Exhibit.

Exhibit No. N/A

5. Apart from the changes already reported, has any cause or circumstance arisen since the grant of the underlying construction permit which would result in any statement or representation contained in the construction permit application to be now incorrect?

☐ Yes ☐ No

If Yes, explain in an Exhibit.

Exhibit No. N/A

6. Has the permittee filed its Ownership Report (FCC Form 323) or ownership certification in accordance with 47 C.F.R. Section 73.3615(b)?

☐ Yes ☐ No

☑ Does not apply

If No, explain in an Exhibit.

Exhibit No.

7. Has an adverse finding been made or an adverse final action been taken by any court or administrative body with respect to the applicant or parties to the application in a civil or criminal proceeding, brought under the provisions of any law relating to the following: any felony; mass media related antitrust or unfair competition; fraudulent statements to another governmental unit; or discrimination?

☐ Yes ☑ No

If the answer is Yes, attach as an Exhibit a full disclosure of the persons and matters involved, including an identification of the court or administrative body and the proceeding (by dates and file numbers), and the disposition of the litigation. Where the requisite information has been earlier disclosed in connection with another application or as required by 47 U.S.C. Section 1.65(c), the applicant need only provide: (i) an identification of that previous submission by reference to the file number in the case of an application, the call letters of the station regarding which the application or Section 1.65 information was filed, and the date of filing; and (ii) the disposition of the previously reported matter.

Exhibit No.

8. Does the applicant, or any party to the application, have a petition on file to migrate to the expanded band (1605-1705 kHz) or a permit or license either in the existing band or expanded band that is held in combination (pursuant to the 5 year holding period allowed) with the AM facility proposed to be modified herein?

☐ Yes ☑ No

If Yes, provide particulars as an Exhibit.

Exhibit No.

The APPLICANT hereby waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because use of the same, whether by license or otherwise, and requests and authorization in accordance with this application. (See Section 304 of the Communications Act of 1934, as amended).

The APPLICANT acknowledges that all the statements made in this application and attached exhibits are considered material representations and that all the exhibits are a material part hereof and are incorporated herein as set out in full in

CERTIFICATION

1. By checking Yes, the applicant certifies, that, in the case of an individual applicant, he or she is not subject to a denial of federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. Section 862, or, in the case of a non-individual applicant (e.g., corporation, partnership or other unincorporated association), no party to the application is subject to a denial of federal benefits that includes FCC benefits pursuant to that section. For the definition of a "party" for these purposes, see 47 C.F.R. Section 1.2002(b).

☑ Yes ☐ No

2. I certify that the statements in this application are true, complete, and correct to the best of my knowledge and belief, and are made in good faith.

Name	Signature	
Yvonne S. Liu		
Title	Date	Telephone Number
Secretary	11/26/2012	212.431.4300

WILLFUL FALSE STATEMENTS ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. CODE, TITLE 18, SECTION 1001), AND/OR REVOCATION OF ANY STATION LICENSE OR CONSTRUCTION

FCC NOTICE TO INDIVIDUALS REQUIRED BY THE PRIVACY ACT AND THE PAPERWORK REDUCTION ACT

The solicitation of personal information requested in this application is authorized by the Communications Act of 1934, as amended. The Commission will use the information provided in this form to determine whether grant of the application is in the public interest. In reaching that determination, or for law enforcement purposes, it may become necessary to refer personal information contained in this form to another government agency. In addition, all information provided in this form will be available for public inspection. If information requested on the form is not provided, the application may be returned without action having been taken upon it or its processing may be delayed while a request is made to provide the missing information. Your response is required to obtain the requested authorization.

Public reporting burden for this collection of information is estimated to average 639 hours and 53 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden, can be sent to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0627), Washington, D. C. 20554. Do NOT send completed forms to this address.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

Multicultural Radio Broadcasting Licensee, LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

[X] Station License [X] Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
				Night	Day
KSJX	not applicable	1500	unlimited	5.0	10.0

2. Station location

State	City or Town
California	San Jose

3. Transmitter location

State	County	City or Town	Street address (or other identification)
CA	Santa Clara	San Jose	501 Wooster St.

4. Main studio location

State	County	City or Town	Street address (or other identification)
CA	Santa Clara	San Jose	501 Wooster St.

5. Remote control point location (specify only if authorized directional antenna)

State	County	City or Town	Street address (or other identification)
CA	Santa Clara	San Jose	501 Wooster St.

6. Has type-approved stereo generating equipment been installed? [ ] Yes [X] No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68? [X] Yes [ ] No [ ] Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed. Exhibit No. Eng. Rpt.

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system	RF common point or antenna current (in amperes) without modulation for day system
10.4	14.49

Measured antenna or common point resistance (in ohms) at operating frequency		Measured antenna or common point reactance (in ohms) at operating frequency	
Night	Day	Night	Day
50.0	50.0	+/-j0	+/-j0

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
1 C	0	0	1.0	1.0	not	not
2 E	63.3	140.8	0.405	0.43	required	required
3 N	unused	94.8	unused	1.02		
4 W	-78.9	unused	0.521	unused		

Manufacturer and type of antenna monitor: Potomac Instruments AM-1901

SECTION III - Page 2

9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
uniform cross section guyed towers *see item 11	59.44	60.4	60.4 (NO LIGHTING	Exhibit No. DNA

Excitation [x] Series [ ] Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	West Longitude
37 ° 21 ' 28 "	121 ° 52 ' 17 "

If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits. Exhibit No. DNA

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system. Exhibit No. ON FILE

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

No change from originally licensed system

11. Give reasons for the change in antenna or common point resistance.

No change -rebuild following destruction of site by fire

*ASR #s 1215674, 1215676, 1215678, 1215679
no lighting or marking required

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type)	Signature (check appropriate box below)
Benj. F. Dawson III, P.E.	
Address (include ZIP Code)	Date
Hatfield & Dawson Consulting Engineers 9500 Greenwood Avenue North Seattle, WA 98103	November 20, 2012
	Telephone No. (Include Area Code) 206 783 9151

[ ] Technical Director

[x] Registered Professional Engineer

[ ] Chief Operator

[ ] Technical Consultant

[x] Other (specify) Consulting Engineer

BENJAMIN F. DAWSON III, PE
THOMAS M. ECKELS, PE
STEPHEN S. LOCKWOOD, PE
DAVID J. PINION, PE
ERIK C. SWANSON, PE

THOMAS S. GORTON, PE
MICHAEL H. MEHIGAN, PE

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JAMES B. HATFIELD, PE
CONSULTANT

MAURY L. HATFIELD, PE
(1942-2009)
PAUL W. LEONARD, PE
(1925-2011)

Application for License

KSJX (AM)

San Jose, CA

1500 kHz

10.0 kW Day, 5.0 kW Night DA-2

Multicultural Radio Broadcasting Licensee, LLC

September, 2012

Revised November, 2012

APPLICATION FOR LICENSE

RADIO STATION KSJX-AM San Jose, CA
1500 kHz, 10 kW Day, 5 kW Night, DA-2

Purpose of Application

Item 1	Tower Impedance Measurements and Verification of Method of Moments Model
Item 2	Derivation of Operating Parameters for Directional Antenna
Item 3	Method of Moments Model Details for Towers Driven Individually
Item 4	Method of Moments Model Details for Directional Antenna Pattern
Item 5	Post Construction Array Geometry Statement
Item 6	Sampling System Measurements
Item 7	Reference Field Strength Measurements
Item 8	Direct Measurement of Power
Item 9	Antenna Monitor and Sampling System
Item 10	Harmonic and Intermodulation Measurements
Appendix A	License BZ-950120AE
Appendix B	FCC Form 302-AM

Purpose of Application

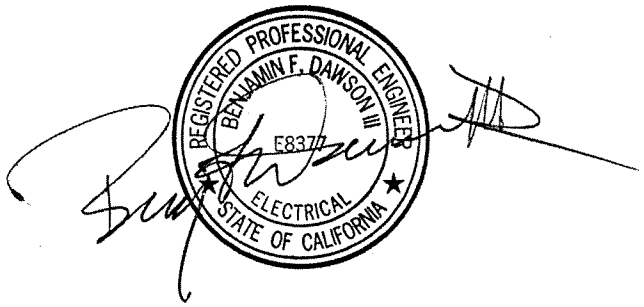
This engineering exhibit supports an application for license for the authorized directional antenna system for radio station KSJX, San Jose, CA. KSJX operates on 1500 kHz with a power of 10 kW daytime and 5 kW nighttime, with different directional antenna parameters for day and night operation.

The most recent complete KSJX license document is BZ-950120AE, and a copy is included in this report as Exhibit A.

Information is provided herein demonstrating that the directional antenna parameters for the patterns authorized by the station license have been determined in accordance with the requirements of section 73.151(c) of the FCC Rules. The system has been adjusted to produce antenna monitor parameters within +/- 5 percent in ratio and +/- 3 degrees in phase of the modeled values, as required by the Rules.

All measurements used in this report were made by Robert Turner, Stephen Lockwood, or the undersigned.

Benjamin F. Dawson III, P.E.



Item 1

Analysis of Tower Impedance Measurements to Verify Method of Moments Model - KSJX

Tower base impedance measurements were made at the locations of the outputs of the antenna coupling units and diplexing filtering equipment using a Hewlett Packard 8751A network analyzer in a calibrated measurement system. The other towers were open circuited at the same point where impedance measurements were made (the "reference points") for each of the measurements.

Circuit calculations were performed to relate the method of moments modeled impedances at the tower base feed points to those at the measurement locations as shown in the following table. The base conditions shown for each tower, which includes the stray capacitances were used in the moment method model as a load at ground level for the open circuited case. The towers each have a lighting choke used as a static drain inductor.

In addition to the page showing the schematic of the assumed circuit and tabulation of calculated values, a page showing the results of calculations using the NETBW circuit analysis program is included. These calculations show the impedance transformations and phase shifts between the tower base values produced by MININEC and the location of the current sample devices used to produce the antenna monitor input signals.

The following table shows the allowable range of modeled impedance values.

KSJX Tower Measurement Matrix:

Tower #	R open	Hi Limit	Lo Limit	X open	Hi Limit	Lo Limit
1	116.00	122.64	109.36	237.50	249.00	226.00
2	150.20	158.21	142.19	229.20	240.37	218.03
3	128.05	135.17	120.93	219.30	230.07	208.53
4	138.20	145.73	130.67	232.00	243.28	220.72

NETBW CALCULATION OF TOWER IMPEDANCE MEASUREMENTS TO VERIFY METHOD OF MOMENTS MODEL

Tower #1 C

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	106.4	195.2	116.45	237.54
-1.537513				

Tower #2 E

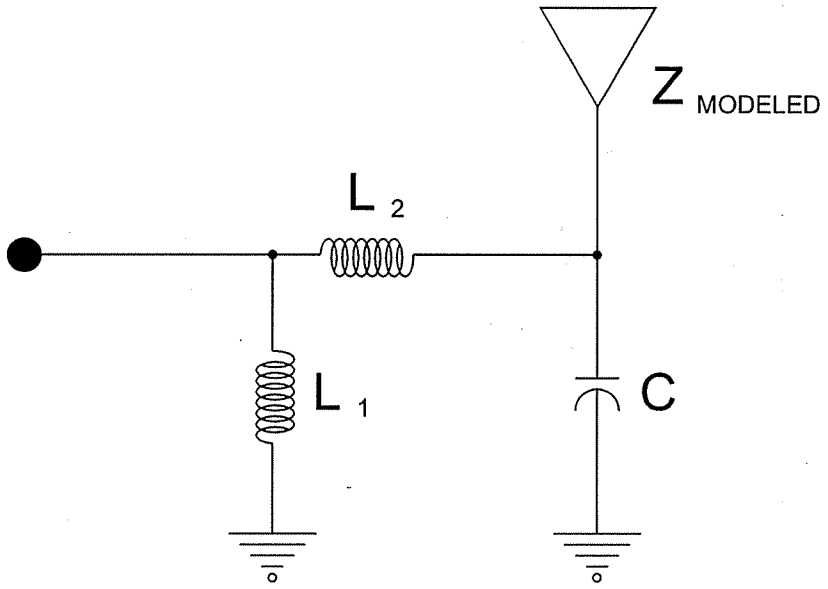
FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	136.1	198.4	149.34	229.38
-1.967563				

Tower #3 N

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	117.4	191.05	128.43	219.74
-1.694145				

Tower #4 W

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	124.34	201.47	136.69	232.62
-1.833124				



TOWER	L_1 Z	L_2 Z	C Z	MODEL Z	INPUT Z	MEAS Z
#1 C	+j14420	+j37	-j3230	106.4 +j195.2	116.45 +j237.56	116.0 +j237.5
#2 E	+j14420	+j27	-j3230	136.1 +j198.4	149.34 +j229.38	150.2 +j229.2
#3 N	+j14420	+j24	-j3230	117.4 +j191.05	128.43 +j219.74	128.05 +j219.3
#4 W	+j14420	+j26	-j3230	124.34 +j201.47	136.69 +j232.62	138.2 +j232.0

L_1 INCLUDES STRAY CAPACITANCE AND LIGHTING CHOKE USED AS STATIC DRAIN

L_2 INCLUDES HOOKUP REACTANCE AND SERIES FILTER STRAY INDUCTANCE

Bob Allen, H&D 11/19/2012 11:31 AM KZSF-KSJX CIRCUIT MOM TABLE.dwg PDF FILE: kzsf-ksjx circuit mom table.pdf

HATFIELD & DAWSON
CONSULTING ENGINEERS

ANALYSIS OF TOWER IMPEDANCE MEASUREMENTS TO VERIFY METHOD OF MOMENTS MODEL

RADIO STATION KSJX SAN JOSE, CA 09/2012 rev 11/20/2012

Item 2

Derivation of Operating Parameters for Directional Antenna - KSJX

The method of moments model of the array, following verification with the measured individual open circuited base impedances, was utilized for directional antenna calculations. Calculations were made to determine the complex voltage values for sources located at ground level under each tower of the array to produce current moment sums for the towers that, when normalized, equated to the theoretical field parameters of the authorized directional antenna patterns. With these voltage sources, the tower currents were calculated. Twenty segments were used for towers in the moment method model.

NETBW CALCULATION OF OPERATING PARAMETERS
FROM METHOD OF MOMENTS MODEL

DAYTIME PATTERN
Tower #1 C

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	193.32	261.69	218.4882	303.901
-2.839545				

Tower #2 E

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	-49.339	300.32	-57.09225	348.6982
-.7323643				

Tower #3 N

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	55.788	114.53	58.78417	140.5306
-.790005				

NIGHTTIME PATTERN
Tower #1 C

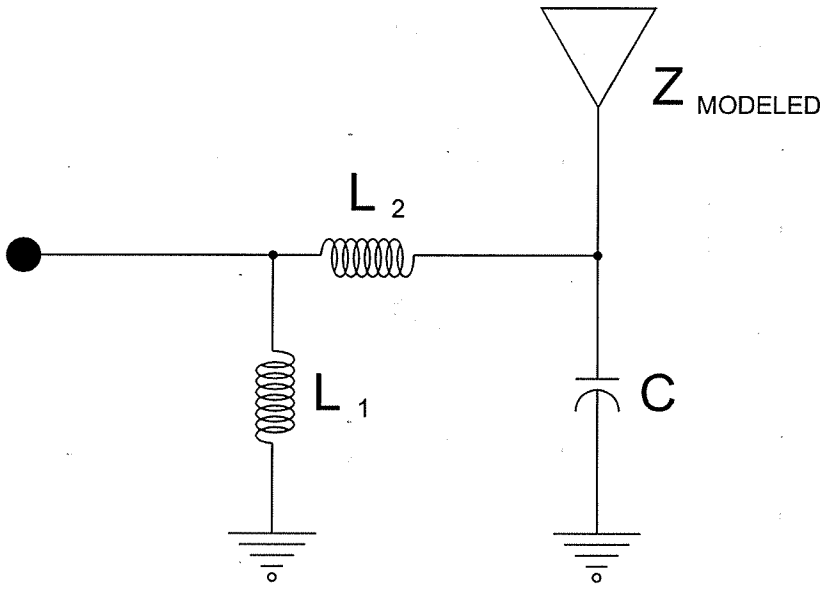
FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	103.5	154.16	110.9762	193.3128
-1.480308				

Tower #2 E

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	52.629	147.88	56.35905	178.9682
-.7515164				

Tower #4 W

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE
1500	303.04	210.7	333.0660	221.5398
-4.3877				



DAY

TOWER	MODEL I_{MAG}	INPUT I_{MAG}	MODEL PHASE	INPUT PHASE	NORMALIZED I_{MAG} PHASE
#1 C	6.4826	6.0978	16.6	19.44	1.0 / 0
#2 E	2.8199	2.6214	161.0	160.27	0.430 / 140.8
#3 N	6.3765	6.2118	113.4	114.19	1.02 / 94.8

NIGHT

TOWER	MODEL I_{MAG}	INPUT I_{MAG}	MODEL PHASE	INPUT PHASE	NORMALIZED I_{MAG} PHASE
#1 C	5.0440	4.8711	10.8	12.28	1.0 / 0
#2 E	2.0422	1.9740	74.8	75.55	0.405 / 63.3
#4 W	2.6618	2.5389	289.0	293.39	0.521 / -78.9

Bob Allen, H&D 11/19/2012 11:31 AM KZSF-KSJX CIRCUIT MOM TABLE.dwg PDF FILE: kzsf-ksjx circuit mom table.pdf

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CONSULTING ENGINEERS

TABLE FOR DERIVATION OF OPERATING PARAMETERS
FROM METHOD OF MOMENT MODEL

RADIO STATION KSJX SAN JOSE, CA 09/201 rev 11/20/2012

Item 3

Method of Moments Model Details for Towers Driven Individually - KSJX

The array of towers was modeled using MININEC.
One wire was used to represent each tower. The top and bottom wire end points were specified using electrical degrees in the geographic coordinate system, using the theoretical directional antenna specifications. Each tower was modeled using 20 wire segments. As the towers are physically 107.1 degrees in electrical height, the segment length is 5.355 electrical degrees.

Each tower's modeled height relative to its physical height falls within the required range of 75 to 125 percent and each modeled radius falls within the required range of 80 percent to 150 percent of the radius of a circle having a circumference equal to the sum of the widths of the tower sides. The array consists of non-identical, uniform cross section towers having face widths of width of 18 inches.

Tower	Physical Height (degrees)	Modeled Height (degrees)	Modeled Percentage of Height	Modeled Radius (meters)	Percent of Equivalent Radius
1	107.1	116.5	108.78	0.218	100.0
2	107.1	117.75	109.94	0.218	100.0
3	107.1	115.75	108.08	0.218	100.0
4	107.1	118.0	110.18	0.218	100.0

The following pages show the details of the method of moments models for the individually driven towers.

KSJX Tower 1 Driven, Towers 2, 3 & 4 Open Circuit at Current Transformer Location

```
C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c
06-14-2012   12:54:57


GEOMETRY
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire  caps Distance     Angle        Z            radius       segs
 1    none 0            0            0            .218          20
           0            0            116.5
 2    none 135.         61.          0            .218          20
           135.         61.          117.75
 3    none 90.          341.         0            .218          20
           90.          341.         115.75
 4    none 100.         251.         0            .218          20
           100.         251.         118.

Number of wires          =  4
          current nodes  =  80

                          minimum                   maximum
Individual wires       wire    value             wire  value
segment length          3      5.7875             4    5.9
radius                  1      .218               1    .218


ELECTRICAL DESCRIPTION
Frequencies (MHZ)
     frequency                 no. of  segment length (wavelengths)
 no. lowest       step          steps   minimum        maximum
 1   1.5          0              1      .0160764       .0163889

Sources
source node    sector  magnitude      phase          type
 1      1       1       1.             0              voltage

Lumped loads
              resistance    reactance     inductance  capacitance passive
load  node    (ohms)        (ohms)        (mH)        (uF)        circuit
 1     21     0             -4,165.       0           0            0
 2     61     0             -4,164.       0           0            0
 3     41     0             -4,164.       0           0            0
```

:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c
06-14-2012 12:54:57

IMPEDANCE
  normalization = 50.

freq (MHZ)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1.5	106.4	195.21	222.32	61.4	9.6576	-1.8052	-4.6839

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c
06-14-2012 12:54:57

CURRENT rms
Frequency = 1.5 MHZ
Input power = .00107629 watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	3.18E-03	298.6	1.52E-03	-2.79E-03
2	0	0	5.825	3.6E-03	294.9	1.52E-03	-3.26E-03
3	0	0	11.65	3.84E-03	293.	1.5E-03	-3.53E-03
4	0	0	17.475	4.01E-03	291.6	1.48E-03	-3.73E-03
5	0	0	23.3	4.13E-03	290.5	1.45E-03	-3.87E-03
6	0	0	29.125	4.2E-03	289.5	1.4E-03	-3.96E-03
7	0	0	34.95	4.21E-03	288.7	1.35E-03	-3.99E-03
8	0	0	40.775	4.18E-03	288.	1.29E-03	-3.97E-03
9	0	0	46.6	4.1E-03	287.4	1.22E-03	-3.91E-03
10	0	0	52.425	3.97E-03	286.8	1.15E-03	-3.8E-03
11	0	0	58.25	3.8E-03	286.3	1.07E-03	-3.65E-03
12	0	0	64.075	3.59E-03	285.8	9.81E-04	-3.46E-03
13	0	0	69.9	3.34E-03	285.4	8.88E-04	-3.22E-03
14	0	0	75.725	3.05E-03	285.	7.9E-04	-2.95E-03
15	0	0	81.55	2.73E-03	284.6	6.88E-04	-2.64E-03
16	0	0	87.375	2.37E-03	284.3	5.84E-04	-2.29E-03
17	0	0	93.2	1.98E-03	283.9	4.76E-04	-1.92E-03
18	0	0	99.025	1.56E-03	283.6	3.66E-04	-1.51E-03
19	0	0	104.85	1.1E-03	283.3	2.54E-04	-1.07E-03
20	0	0	110.675	6.11E-04	283.	1.38E-04	-5.96E-04
END	0	0	116.5	0	0	0	0
GND	65.4493	-118.074	0	4.72E-05	110.9	-1.69E-05	4.41E-05
22	65.4493	-118.074	5.8875	1.81E-04	110.9	-6.47E-05	1.69E-04
23	65.4493	-118.074	11.775	2.64E-04	110.9	-9.43E-05	2.47E-04
24	65.4493	-118.074	17.6625	3.32E-04	110.8	-1.18E-04	3.1E-04
25	65.4493	-118.074	23.55	3.87E-04	110.8	-1.37E-04	3.61E-04
26	65.4493	-118.074	29.4375	4.31E-04	110.7	-1.53E-04	4.03E-04
27	65.4493	-118.074	35.325	4.65E-04	110.7	-1.64E-04	4.35E-04
28	65.4493	-118.074	41.2125	4.89E-04	110.6	-1.72E-04	4.58E-04
29	65.4493	-118.074	47.1	5.04E-04	110.6	-1.77E-04	4.72E-04
30	65.4493	-118.074	52.9875	5.1E-04	110.5	-1.79E-04	4.77E-04
31	65.4493	-118.074	58.875	5.06E-04	110.4	-1.77E-04	4.74E-04
32	65.4493	-118.074	64.7625	4.94E-04	110.4	-1.72E-04	4.63E-04
33	65.4493	-118.074	70.65	4.72E-04	110.3	-1.64E-04	4.43E-04
34	65.4493	-118.074	76.5375	4.42E-04	110.2	-1.53E-04	4.15E-04

35	65.4493	-118.074	82.425	4.04E-04	110.1	-1.39E-04	3.8E-04
36	65.4493	-118.074	88.3125	3.59E-04	110.1	-1.23E-04	3.37E-04
37	65.4493	-118.074	94.2	3.05E-04	110.	-1.04E-04	2.87E-04
38	65.4493	-118.074	100.088	2.45E-04	109.9	-8.32E-05	2.3E-04
39	65.4493	-118.074	105.975	1.76E-04	109.8	-5.97E-05	1.66E-04
40	65.4493	-118.074	111.863	9.94E-05	109.7	-3.35E-05	9.36E-05
END	65.4493	-118.074	117.75	0	0	0	0
GND	85.0967	29.3011	0	5.51E-05	157.3	-5.09E-05	2.12E-05
42	85.0967	29.3011	5.7875	2.1E-04	157.3	-1.94E-04	8.1E-05
43	85.0967	29.3011	11.575	3.06E-04	157.3	-2.82E-04	1.18E-04
44	85.0967	29.3011	17.3625	3.83E-04	157.3	-3.53E-04	1.48E-04
45	85.0967	29.3011	23.15	4.46E-04	157.3	-4.11E-04	1.72E-04
46	85.0967	29.3011	28.9375	4.96E-04	157.2	-4.58E-04	1.92E-04
47	85.0967	29.3011	34.725	5.35E-04	157.2	-4.93E-04	2.07E-04
48	85.0967	29.3011	40.5125	5.63E-04	157.2	-5.19E-04	2.18E-04
49	85.0967	29.3011	46.3	5.79E-04	157.2	-5.34E-04	2.25E-04
50	85.0967	29.3011	52.0875	5.85E-04	157.2	-5.4E-04	2.27E-04
51	85.0967	29.3011	57.875	5.81E-04	157.2	-5.35E-04	2.25E-04
52	85.0967	29.3011	63.6625	5.66E-04	157.2	-5.22E-04	2.2E-04
53	85.0967	29.3011	69.45	5.41E-04	157.2	-4.99E-04	2.1E-04
54	85.0967	29.3011	75.2375	5.07E-04	157.2	-4.67E-04	1.97E-04
55	85.0967	29.3011	81.025	4.63E-04	157.2	-4.27E-04	1.8E-04
56	85.0967	29.3011	86.8125	4.1E-04	157.2	-3.78E-04	1.59E-04
57	85.0967	29.3011	92.6	3.49E-04	157.2	-3.22E-04	1.35E-04
58	85.0967	29.3011	98.3875	2.8E-04	157.2	-2.58E-04	1.08E-04
59	85.0967	29.3011	104.175	2.02E-04	157.3	-1.86E-04	7.8E-05
60	85.0967	29.3011	109.963	1.14E-04	157.3	-1.05E-04	4.39E-05
END	85.0967	29.3011	115.75	0	0	0	0
GND	-32.5568	94.5519	0	6.17E-05	143.	-4.93E-05	3.71E-05
62	-32.5568	94.5519	5.9	2.37E-04	143.	-1.89E-04	1.43E-04
63	-32.5568	94.5519	11.8	3.46E-04	143.	-2.76E-04	2.08E-04
64	-32.5568	94.5519	17.7	4.34E-04	142.9	-3.46E-04	2.61E-04
65	-32.5568	94.5519	23.6	5.05E-04	142.9	-4.03E-04	3.05E-04
66	-32.5568	94.5519	29.5	5.63E-04	142.9	-4.49E-04	3.4E-04
67	-32.5568	94.5519	35.4	6.08E-04	142.8	-4.84E-04	3.67E-04
68	-32.5568	94.5519	41.3	6.4E-04	142.8	-5.09E-04	3.87E-04
69	-32.5568	94.5519	47.2	6.59E-04	142.8	-5.25E-04	3.99E-04
70	-32.5568	94.5519	53.1	6.66E-04	142.7	-5.3E-04	4.03E-04
71	-32.5568	94.5519	59.	6.61E-04	142.7	-5.26E-04	4.E-04
72	-32.5568	94.5519	64.9	6.44E-04	142.7	-5.12E-04	3.91E-04
73	-32.5568	94.5519	70.8	6.16E-04	142.6	-4.9E-04	3.74E-04
74	-32.5568	94.5519	76.7	5.77E-04	142.6	-4.58E-04	3.5E-04
75	-32.5568	94.5519	82.6	5.27E-04	142.6	-4.19E-04	3.2E-04
76	-32.5568	94.5519	88.5	4.67E-04	142.6	-3.71E-04	2.84E-04
77	-32.5568	94.5519	94.4	3.97E-04	142.5	-3.15E-04	2.42E-04
78	-32.5568	94.5519	100.3	3.18E-04	142.5	-2.53E-04	1.94E-04
79	-32.5568	94.5519	106.2	2.29E-04	142.5	-1.82E-04	1.4E-04
80	-32.5568	94.5519	112.1	1.29E-04	142.4	-1.02E-04	7.87E-05
END	-32.5568	94.5519	118.	0	0	0	0

KSJX Tower 2 Driven, Towers 1, 3 & 4 Open Circuit at Current Transformer Location

```
C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c
06-14-2012   12:52:09

IMPEDANCE
   normalization = 50.
freq      resist    react     imped     phase     VSWR      S11       S12
(MHZ)     (ohms)    (ohms)    (ohms)    (deg)               dB        dB
source =  1; node 21, sector 1
1.5       136.1     198.4     240.6     55.6      8.7598    -1.9918   -4.3433
```

KSJX Tower 3 Driven, Towers 1, 2& 4 Open Circuit at Current Transformer Location

```
C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c
06-14-2012   12:58:07

IMPEDANCE
   normalization = 50.
freq      resist    react     imped     phase     VSWR      S11       S12
(MHZ)     (ohms)    (ohms)    (ohms)    (deg)               dB        dB
source =  1; node 41, sector 1
1.5       117.4     191.05    224.24    58.4      8.8792    -1.9648   -4.3901
```

KSJX Tower 4 Driven, Towers 1, 2 & 3 Open Circuit at Current Transformer Location

```
C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c
11-20-2012   10:24:20


GEOMETRY
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire  caps Distance     Angle        Z            radius       segs
 1    none 0            0            0            .218          20
           0            0            116.5
 2    none 135.         61.          0            .218          20
           135.         61.          117.75
 3    none 90.          341.         0            .218          20
           90.          341.         115.75
 4    none 100.         251.         0            .218          20
           100.         251.         118.

Number of wires          =  4
          current nodes  =  80

                         minimum                   maximum
Individual wires       wire    value             wire  value
segment length          3      5.7875             4    5.9
radius                  1      .218               1    .218


ELECTRICAL DESCRIPTION
Frequencies (MHz)
     frequency                 no. of  segment length (wavelengths)
 no. lowest       step          steps   minimum        maximum
 1   1.5          0              1      .0160764       .0163889

Sources
source node    sector  magnitude      phase          type
 1      61      1       1.             0              voltage

Lumped loads
             resistance    reactance     inductance  capacitance passive
load  node   (ohms)        (ohms)        (mH)        (uF)        circuit
 1     21    0             -4,165.       0           0            0
 2     41    0             -4,164.       0           0            0
 3     1     0             -4,165.       0           0            0

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c
11-20-2012   10:24:20

IMPEDANCE
   normalization = 50.
freq     resist   react    imped    phase    VSWR    S11      S12
(MHz)    (ohms)   (ohms)   (ohms)   (deg)            dB       dB
source =  1; node 61, sector 1
1.5      124.34   201.47   236.75   58.3     9.3106  -1.873   -4.5553
```

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c
11-20-2012 10:24:20

CURRENT rms
Frequency = 1.5 MHz
Input power = 10,000. watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	.173689	146.3	-.144572	.0962646
2	0	0	5.825	.663896	146.3	-.552519	.368077
3	0	0	11.65	.966682	146.3	-.804302	.536257
4	0	0	17.475	1.21098	146.3	-1.00725	.672239
5	0	0	23.3	1.41056	146.3	-1.17286	.783635
6	0	0	29.125	1.57095	146.2	-1.30574	.873459
7	0	0	34.95	1.69456	146.2	-1.40793	.943004
8	0	0	40.775	1.78265	146.2	-1.48053	.992918
9	0	0	46.6	1.83603	146.1	-1.52422	1.02359
10	0	0	52.425	1.85536	146.1	-1.53963	1.03534
11	0	0	58.25	1.84135	146.	-1.52734	1.0285
12	0	0	64.075	1.79478	146.	-1.48807	1.00345
13	0	0	69.9	1.71658	146.	-1.4226	.960656
14	0	0	75.725	1.60779	145.9	-1.33184	.900659
15	0	0	81.55	1.46956	145.9	-1.21678	.82405
16	0	0	87.375	1.30305	145.9	-1.0784	.731428
17	0	0	93.2	1.10927	145.8	-.917583	.623321
18	0	0	99.025	.888795	145.8	-.734827	.499987
19	0	0	104.85	.640871	145.7	-.529561	.360945
20	0	0	110.675	.361208	145.7	-.298292	.203698
END	0	0	116.5	0	0	0	0
GND	65.4493	-118.074	0	.127122	2.3	.127024	5.01E-03
22	65.4493	-118.074	5.8875	.488485	2.2	.488114	.0190369
23	65.4493	-118.074	11.775	.71286	2.2	.712338	.027269
24	65.4493	-118.074	17.6625	.89469	2.1	.894064	.0334454
25	65.4493	-118.074	23.55	1.04405	2.1	1.04336	.0379984
26	65.4493	-118.074	29.4375	1.1649	2.	1.16417	.0411331
27	65.4493	-118.074	35.325	1.2589	2.	1.25816	.0429766
28	65.4493	-118.074	41.2125	1.32686	1.9	1.32615	.043634
29	65.4493	-118.074	47.1	1.36926	1.8	1.36858	.0432064
30	65.4493	-118.074	52.9875	1.38644	1.7	1.38581	.0418006
31	65.4493	-118.074	58.875	1.37879	1.6	1.37822	.0395307
32	65.4493	-118.074	64.7625	1.34673	1.6	1.34623	.0365204
33	65.4493	-118.074	70.65	1.29081	1.5	1.29039	.0329029
34	65.4493	-118.074	76.5375	1.21164	1.4	1.2113	.0288196
35	65.4493	-118.074	82.425	1.10994	1.3	1.10967	.0244191
36	65.4493	-118.074	88.3125	.986394	1.2	.986194	.0198563
37	65.4493	-118.074	94.2	.841631	1.	.841492	.0152914
38	65.4493	-118.074	100.088	.675905	.9	.675817	.0108867
39	65.4493	-118.074	105.975	.488484	.8	.488437	6.8E-03
40	65.4493	-118.074	111.863	.275915	.7	.275896	3.2E-03
END	65.4493	-118.074	117.75	0	0	0	0
GND	85.0967	29.3011	0	.156707	107.9	-.0482706	.149088
42	85.0967	29.3011	5.7875	.597227	107.9	-.183721	.568267
43	85.0967	29.3011	11.575	.869057	107.9	-.266735	.827111
44	85.0967	29.3011	17.3625	1.08842	107.8	-.333142	1.03618
45	85.0967	29.3011	23.15	1.26773	107.8	-.386816	1.20727
46	85.0967	29.3011	28.9375	1.41195	107.7	-.429357	1.34509
47	85.0967	29.3011	34.725	1.5233	107.6	-.461521	1.4517

48	85.0967	29.3011	40.5125	1.6029	107.6	-.483757	1.52815
49	85.0967	29.3011	46.3	1.65147	107.5	-.496388	1.5751
50	85.0967	29.3011	52.0875	1.6696	107.4	-.499702	1.59307
51	85.0967	29.3011	57.875	1.65788	107.3	-.494001	1.58257
52	85.0967	29.3011	63.6625	1.61698	107.3	-.479602	1.54421
53	85.0967	29.3011	69.45	1.54765	107.2	-.456858	1.47868
54	85.0967	29.3011	75.2375	1.45077	107.1	-.426151	1.38676
55	85.0967	29.3011	81.025	1.32726	107.	-.387884	1.26931
56	85.0967	29.3011	86.8125	1.17807	106.9	-.342463	1.12719
57	85.0967	29.3011	92.6	1.004	106.8	-.290256	.96113
58	85.0967	29.3011	98.3875	.805435	106.7	-.231511	.771446
59	85.0967	29.3011	104.175	.581548	106.6	-.166147	.557309
60	85.0967	29.3011	109.963	.328292	106.5	-.0931846	.314789
END	85.0967	29.3011	115.75	0	0	0	0
GND	-32.5568	94.5519	0	8.96811	301.7	4.70988	-7.63178
62	-32.5568	94.5519	5.9	10.2033	297.4	4.69468	-9.05905
63	-32.5568	94.5519	11.8	10.9279	295.2	4.64922	-9.8896
64	-32.5568	94.5519	17.7	11.4556	293.5	4.57387	-10.5029
65	-32.5568	94.5519	23.6	11.8182	292.2	4.46928	-10.9405
66	-32.5568	94.5519	29.5	12.0286	291.1	4.33637	-11.2197
67	-32.5568	94.5519	35.4	12.0932	290.2	4.17624	-11.3492
68	-32.5568	94.5519	41.3	12.0163	289.4	3.99025	-11.3345
69	-32.5568	94.5519	47.2	11.8018	288.7	3.77999	-11.18
70	-32.5568	94.5519	53.1	11.4535	288.	3.5472	-10.8903
71	-32.5568	94.5519	59.	10.976	287.5	3.29386	-10.4701
72	-32.5568	94.5519	64.9	10.3745	286.9	3.02201	-9.92457
73	-32.5568	94.5519	70.8	9.65472	286.4	2.7338	-9.25959
74	-32.5568	94.5519	76.7	8.82307	286.	2.43155	-8.4814
75	-32.5568	94.5519	82.6	7.88613	285.6	2.11739	-7.59655
76	-32.5568	94.5519	88.5	6.8505	285.2	1.79349	-6.61156
77	-32.5568	94.5519	94.4	5.72191	284.8	1.46166	-5.53207
78	-32.5568	94.5519	100.3	4.50373	284.4	1.12312	-4.36144
79	-32.5568	94.5519	106.2	3.19304	284.1	.777567	-3.09691
80	-32.5568	94.5519	112.1	1.77009	283.8	.42086	-1.71933
END	-32.5568	94.5519	118.	0	0	0	0

Item 4

Method of Moments Model Details for Directional Antenna- KZSF

The array of towers was modeled using MININEC with the individual tower characteristics that were verified by the individual tower impedance measurements. Calculations were made to determine the complex voltage values for sources located at ground level under each tower of the array to produce current moment sums for the towers that, when normalized, equated to the theoretical field parameters of the authorized directional antenna pattern. The following pages contain details of the method of moments models of the directional antenna patterns.

Tower	Wire	Base Node
1	1	1
2	2	21
3	3	41
4	4	61

KSJX Driven Array - Day

```
C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012
Analysis\ksjx-1c-driven day  06-14-2012   14:12:08


GEOMETRY
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire  caps Distance     Angle        Z            radius      segs
 1    none 0            0            0            .218         20
           0            0            116.5
 2    none 135.         61.          0            .218         20
           135.         61.          117.75
 3    none 90.          341.         0            .218         20
           90.          341.         115.75
 4    none 100.         251.         0            .218         20
           100.         251.         118.

Number of wires          =  4
          current nodes  =  80

                          minimum                   maximum
Individual wires       wire    value              wire  value
segment length          3      5.7875              4    5.9
radius                  1      .218                1    .218


ELECTRICAL DESCRIPTION
Frequencies (MHZ)
     frequency                 no. of  segment length (wavelengths)
 no. lowest       step          steps   minimum        maximum
 1   1.5          0              1      .0160764       .0163889

Sources
source node    sector  magnitude      phase          type
 1      1       1      2,978.97       70.1           voltage
 2      21      1      1,212.2        260.3          voltage
 3      41      1      1,147.35       177.4          voltage

Lumped loads
             resistance    reactance     inductance  capacitance passive
load  node   (ohms)        (ohms)        (mH)        (uF)        circuit
 1     61    0             384.4         0           0            0

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012
Analysis\ksjx-1c-driven day  06-14-2012   14:12:08
```

IMPEDANCE
normalization = 50.

freq (MHZ)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1.5	193.32	261.69	325.35	53.5	11.12	-1.5665	-5.1884
source = 2; node 21, sector 1							
1.5	-49.339	300.32	304.35	99.3	****	****	****
source = 3; node 41, sector 1							
1.5	55.788	114.53	127.39	64.	6.5621	-2.6681	-3.3818

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c-driven day 06-14-2012 14:12:08

CURRENT rms
Frequency = 1.5 MHZ
Input power = 10,000. watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	6.48259	16.6	6.21388	1.84707
2	0	0	5.825	7.66022	10.2	7.5396	1.35401
3	0	0	11.65	8.37931	7.1	8.31529	1.03384
4	0	0	17.475	8.92717	4.9	8.89486	.758789
5	0	0	23.3	9.33108	3.2	9.31683	.515468
6	0	0	29.125	9.60207	1.8	9.59741	.298818
7	0	0	34.95	9.74505	.6	9.74447	.106949
8	0	0	40.775	9.76321	359.6	9.76302	-.0607753
9	0	0	46.6	9.65912	358.8	9.65696	-.204453
10	0	0	52.425	9.43582	358.	9.43026	-.323966
11	0	0	58.25	9.09661	357.4	9.08694	-.419148
12	0	0	64.075	8.64531	356.8	8.63141	-.489873
13	0	0	69.9	8.08655	356.2	8.06876	-.5361
14	0	0	75.725	7.42529	355.7	7.4043	-.557893
15	0	0	81.55	6.6667	355.2	6.64352	-.555413
16	0	0	87.375	5.81613	354.8	5.79203	-.528885
17	0	0	93.2	4.87807	354.4	4.85455	-.478513
18	0	0	99.025	3.85508	354.	3.83382	-.4043
19	0	0	104.85	2.74417	353.6	2.7271	-.305584
20	0	0	110.675	1.52776	353.2	1.51715	-.179798
END	0	0	116.5	0	0	0	0
GND	65.4493	-118.074	0	2.81992	161.	-2.66581	.919449
22	65.4493	-118.074	5.8875	3.39071	162.6	-3.23509	1.01544
23	65.4493	-118.074	11.775	3.72591	163.3	-3.56937	1.06863
24	65.4493	-118.074	17.6625	3.97635	163.9	-3.81977	1.10486
25	65.4493	-118.074	23.55	4.15838	164.3	-4.00275	1.12699
26	65.4493	-118.074	29.4375	4.27875	164.6	-4.12513	1.13623
27	65.4493	-118.074	35.325	4.34077	164.9	-4.19024	1.1332
28	65.4493	-118.074	41.2125	4.34645	165.1	-4.20012	1.11831
29	65.4493	-118.074	47.1	4.29745	165.3	-4.15641	1.09194
30	65.4493	-118.074	52.9875	4.19533	165.4	-4.06066	1.05444
31	65.4493	-118.074	58.875	4.04182	165.6	-3.91457	1.0062

32	65.4493	-118.074	64.7625	3.83881	165.7	-3.72001	.947649
33	65.4493	-118.074	70.65	3.58841	165.8	-3.47902	.879263
34	65.4493	-118.074	76.5375	3.29291	165.9	-3.19387	.801531
35	65.4493	-118.074	82.425	2.95473	166.	-2.86691	.714992
36	65.4493	-118.074	88.3125	2.57622	166.1	-2.50047	.620136
37	65.4493	-118.074	94.2	2.15946	166.1	-2.09656	.517382
38	65.4493	-118.074	100.088	1.70558	166.2	-1.65633	.406927
39	65.4493	-118.074	105.975	1.21332	166.2	-1.17854	.288395
40	65.4493	-118.074	111.863	.674924	166.3	-.655714	.159879
END	65.4493	-118.074	117.75	0	0	0	0
GND	85.0967	29.3011	0	6.37648	113.4	-2.52944	5.85332
42	85.0967	29.3011	5.7875	6.85418	111.4	-2.49658	6.38333
43	85.0967	29.3011	11.575	7.10641	110.2	-2.45732	6.66804
44	85.0967	29.3011	17.3625	7.26226	109.3	-2.40527	6.85239
45	85.0967	29.3011	23.15	7.33573	108.6	-2.34001	6.9525
46	85.0967	29.3011	28.9375	7.33299	108.	-2.26166	6.97551
47	85.0967	29.3011	34.725	7.25755	107.4	-2.17061	6.92535
48	85.0967	29.3011	40.5125	7.11203	106.9	-2.06743	6.80491
49	85.0967	29.3011	46.3	6.89893	106.4	-1.95283	6.61678
50	85.0967	29.3011	52.0875	6.62085	106.	-1.82763	6.3636
51	85.0967	29.3011	57.875	6.28065	105.6	-1.69277	6.04823
52	85.0967	29.3011	63.6625	5.8815	105.3	-1.54928	5.67378
53	85.0967	29.3011	69.45	5.42683	104.9	-1.39822	5.24361
54	85.0967	29.3011	75.2375	4.92029	104.6	-1.24075	4.76128
55	85.0967	29.3011	81.025	4.36564	104.3	-1.07799	4.23046
56	85.0967	29.3011	86.8125	3.76649	104.	-.911031	3.65465
57	85.0967	29.3011	92.6	3.12597	103.7	-.740834	3.03691
58	85.0967	29.3011	98.3875	2.44583	103.4	-.568012	2.37896
59	85.0967	29.3011	104.175	1.72446	103.2	-.392445	1.67922
60	85.0967	29.3011	109.963	.951252	102.9	-.212057	.927315
END	85.0967	29.3011	115.75	0	0	0	0
GND	-32.5568	94.5519	0	1.61485	78.3	.326568	1.58148
62	-32.5568	94.5519	5.9	1.18526	78.3	.239387	1.16083
63	-32.5568	94.5519	11.8	.90562	78.4	.181933	.887157
64	-32.5568	94.5519	17.7	.665305	78.6	.13188	.652103
65	-32.5568	94.5519	23.6	.452687	78.9	.0869521	.444258
66	-32.5568	94.5519	29.5	.263429	79.9	.046363	.259317
67	-32.5568	94.5519	35.4	.096173	84.1	9.9E-03	.0956619
68	-32.5568	94.5519	41.3	.0523129	244.6	-.0224107	-.0472695
69	-32.5568	94.5519	47.2	.176934	253.4	-.050455	-.169587
70	-32.5568	94.5519	53.1	.281157	254.7	-.0740735	-.271224
71	-32.5568	94.5519	59.	.364175	255.2	-.0931046	-.352073
72	-32.5568	94.5519	64.9	.425829	255.4	-.107402	-.412062
73	-32.5568	94.5519	70.8	.466082	255.5	-.116847	-.451197
74	-32.5568	94.5519	76.7	.484998	255.5	-.121346	-.469572
75	-32.5568	94.5519	82.6	.482733	255.5	-.120836	-.467365
76	-32.5568	94.5519	88.5	.459508	255.5	-.115269	-.444815
77	-32.5568	94.5519	94.4	.41553	255.4	-.104592	-.402152
78	-32.5568	94.5519	100.3	.35085	255.4	-.0887072	-.33945
79	-32.5568	94.5519	106.2	.26495	255.3	-.0673554	-.256246
80	-32.5568	94.5519	112.1	.155686	255.2	-.0398388	-.150503
END	-32.5568	94.5519	118.	0	0	0	0

KSJX Driven Array - Night

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C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012
Analysis\ksjx-1c-driven nite  06-14-2012   14:28:15

KZSF 1370 San Jose

GEOMETRY
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire  caps Distance    Angle        Z            radius      segs
 1    none 0           0            0            .218         20
           0           0            116.5
 2    none 135.        61.          0            .218         20
           135.        61.          117.75
 3    none 90.         341.         0            .218         20
           90.         341.         115.75
 4    none 100.        251.         0            .218         20
           100.        251.         118.

Number of wires          =  4
          current nodes  =  80

                          minimum                  maximum
Individual wires        wire    value             wire  value
segment length           3      5.7875             4    5.9
radius                   1      .218               1    .218


ELECTRICAL DESCRIPTION
Frequencies (MHZ)
     frequency                  no. of  segment length (wavelengths)
 no. lowest       step          steps   minimum        maximum
 1   1.5          0              1      .0160764       .0163889

Sources
source node    sector  magnitude      phase          type
 1      1       1       1,323.9        66.9           voltage
 2      21      1       453.122        145.2          voltage
 3      61      1       1,388.76       323.8          voltage

Lumped loads
             resistance    reactance     inductance  capacitance passive
load  node   (ohms)        (ohms)        (mH)        (uF)        circuit
 1     41    0             396.17        0           0            0

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Analysis\ksjx-1c-driven nite  06-14-2012   14:28:15
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IMPEDANCE
normalization = 50.

freq (MHZ)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1.5	103.5	154.16	185.68	56.1	7.0023	-2.4979	-3.5913
source = 2; node 21, sector 1							
1.5	52.629	147.88	156.97	70.4	10.215	-1.706	-4.8831
source = 3; node 61, sector 1							
1.5	303.04	210.7	369.09	34.8	9.0452	-1.9284	-4.4544

Parallel combination of all sources.

1.5	37.0563	60.4969	70.9439	58.5	3.8028	-4.6781	-1.8082

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c-driven nite 06-14-2012 14:28:15

CURRENT rms
Frequency = 1.5 MHZ
Input power = 5,000. watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	5.04403	10.8	4.95505	.943255
2	0	0	5.825	5.56689	7.1	5.52385	.690954
3	0	0	11.65	5.86338	5.2	5.83962	.527264
4	0	0	17.475	6.06861	3.7	6.05627	.386775
5	0	0	23.3	6.19636	2.4	6.1908	.262611
6	0	0	29.125	6.25243	1.4	6.25058	.15215
7	0	0	34.95	6.23977	.5	6.23953	.0543915
8	0	0	40.775	6.16048	359.7	6.1604	-.0310242
9	0	0	46.6	6.01648	359.	6.01558	-.104177
10	0	0	52.425	5.80984	358.4	5.80749	-.165033
11	0	0	58.25	5.54284	357.8	5.53873	-.213521
12	0	0	64.075	5.21811	357.3	5.21214	-.249585
13	0	0	69.9	4.83854	356.8	4.83082	-.273201
14	0	0	75.725	4.40726	356.3	4.39808	-.284393
15	0	0	81.55	3.92751	355.9	3.91729	-.283224
16	0	0	87.375	3.4025	355.5	3.39178	-.269789
17	0	0	93.2	2.83494	355.1	2.8244	-.244171
18	0	0	99.025	2.2264	354.7	2.21682	-.206355
19	0	0	104.85	1.57534	354.3	1.5676	-.155995
20	0	0	110.675	.871909	354.	.867064	-.0917844
END	0	0	116.5	0	0	0	0
GND	65.4493	-118.074	0	2.04219	74.8	.535788	1.97065
22	65.4493	-118.074	5.8875	2.24311	72.9	.659071	2.1441
23	65.4493	-118.074	11.775	2.35379	71.9	.73188	2.23711
24	65.4493	-118.074	17.6625	2.42784	71.1	.786883	2.29678
25	65.4493	-118.074	23.55	2.47112	70.4	.827639	2.3284
26	65.4493	-118.074	29.4375	2.48617	69.9	.855597	2.3343
27	65.4493	-118.074	35.325	2.47434	69.4	.87145	2.31581
28	65.4493	-118.074	41.2125	2.43664	68.9	.875624	2.27388

29	65.4493	-118.074	47.1	2.37394	68.5	.868437	2.20939
30	65.4493	-118.074	52.9875	2.28716	68.2	.850185	2.12327
31	65.4493	-118.074	58.875	2.1773	67.8	.821201	2.0165
32	65.4493	-118.074	64.7625	2.04549	67.5	.781839	1.89017
33	65.4493	-118.074	70.65	1.89291	67.2	.732509	1.74543
34	65.4493	-118.074	76.5375	1.72085	67.	.673646	1.58352
35	65.4493	-118.074	82.425	1.53065	66.7	.605713	1.40571
36	65.4493	-118.074	88.3125	1.3236	66.4	.529171	1.21322
37	65.4493	-118.074	94.2	1.10082	66.2	.444414	1.00712
38	65.4493	-118.074	100.088	.862951	66.	.351655	.78805
39	65.4493	-118.074	105.975	.609457	65.7	.250607	.555548
40	65.4493	-118.074	111.863	.336609	65.5	.139648	.306275
END	65.4493	-118.074	117.75	0	0	0	0
GND	85.0967	29.3011	0	.631207	41.2	.474759	.415964
42	85.0967	29.3011	5.7875	.460278	41.2	.346147	.303378
43	85.0967	29.3011	11.575	.34979	41.3	.262902	.230728
44	85.0967	29.3011	17.3625	.255256	41.4	.191576	.168685
45	85.0967	29.3011	23.15	.172005	41.6	.12867	.114148
46	85.0967	29.3011	28.9375	.0982471	42.1	.0728597	.0659087
47	85.0967	29.3011	34.725	.0333194	44.8	.0236443	.0234761
48	85.0967	29.3011	40.5125	.0233512	214.9	-.0191529	-.0133583
49	85.0967	29.3011	46.3	.0713096	218.8	-.0555748	-.0446821
50	85.0967	29.3011	52.0875	.110929	219.5	-.0856163	-.0705338
51	85.0967	29.3011	57.875	.142159	219.8	-.109268	-.0909383
52	85.0967	29.3011	63.6625	.165025	219.9	-.126542	-.105926
53	85.0967	29.3011	69.45	.179587	220.	-.137481	-.115543
54	85.0967	29.3011	75.2375	.185946	220.1	-.142166	-.119853
55	85.0967	29.3011	81.025	.184244	220.2	-.140709	-.11894
56	85.0967	29.3011	86.8125	.174642	220.3	-.133245	-.112897
57	85.0967	29.3011	92.6	.1573	220.3	-.119906	-.101813
58	85.0967	29.3011	98.3875	.132315	220.4	-.10078	-.0857365
59	85.0967	29.3011	104.175	.0995675	220.4	-.0757843	-.0645788
60	85.0967	29.3011	109.963	.0583271	220.5	-.0443699	-.0378599
END	85.0967	29.3011	115.75	0	0	0	0
GND	-32.5568	94.5519	0	2.66182	289.	.866159	-2.51696
62	-32.5568	94.5519	5.9	3.08626	278.7	.46658	-3.05078
63	-32.5568	94.5519	11.8	3.37016	273.6	.211117	-3.36354
64	-32.5568	94.5519	17.7	3.59693	269.9	-3.68E-03	-3.59693
65	-32.5568	94.5519	23.6	3.77117	267.1	-.18875	-3.76644
66	-32.5568	94.5519	29.5	3.89417	264.9	-.348263	-3.87856
67	-32.5568	94.5519	35.4	3.96611	263.	-.483853	-3.93649
68	-32.5568	94.5519	41.3	3.9871	261.4	-.596173	-3.94228
69	-32.5568	94.5519	47.2	3.9574	260.	-.685468	-3.89758
70	-32.5568	94.5519	53.1	3.8776	258.8	-.751844	-3.80401
71	-32.5568	94.5519	59.	3.74866	257.7	-.795394	-3.6633
72	-32.5568	94.5519	64.9	3.57189	256.8	-.816284	-3.47737
73	-32.5568	94.5519	70.8	3.34894	255.9	-.814756	-3.24831
74	-32.5568	94.5519	76.7	3.0817	255.1	-.79117	-2.97841
75	-32.5568	94.5519	82.6	2.7723	254.4	-.745965	-2.67005
76	-32.5568	94.5519	88.5	2.42288	253.7	-.679636	-2.3256
77	-32.5568	94.5519	94.4	2.03531	253.1	-.592627	-1.94712
78	-32.5568	94.5519	100.3	1.61071	252.5	-.485154	-1.5359
79	-32.5568	94.5519	106.2	1.14789	251.9	-.356691	-1.09107
80	-32.5568	94.5519	112.1	.639562	251.3	-.204649	-.605936
END	-32.5568	94.5519	118.	0	0	0	0

KSJX - Tower 3 Detuning

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012 Analysis\ksjx-1c-detuning3 06-14-2012 14:26:27

KZSF 1370 San Jose

GEOMETRY
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.218	20
		0	0	116.5		
2	none	135.	61.	0	.218	20
		135.	61.	117.75		
3	none	90.	341.	0	.218	20
		90.	341.	115.75		
4	none	100.	251.	0	.218	20
		100.	251.	118.		

Number of wires = 4
current nodes = 80

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	3	5.7875	4	5.9
radius	1	.218	1	.218

ELECTRICAL DESCRIPTION
Frequencies (MHZ)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1.5	0	1	.0160764	.0163889

Sources

source	node	sector	magnitude	phase	type
1	1	1	1,323.9	66.9	voltage
2	21	1	453.122	145.2	voltage
3	41	1	354.066	311.3	voltage
4	61	1	1,388.76	323.8	voltage

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012
Analysis\ksjx-1c-detuning3 06-14-2012 14:26:27

IMPEDANCE
  normalization = 50.

freq (MHZ)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1.5	103.5	154.06	185.6	56.1	6.9966	-2.5	-3.5886
source = 2; node 21, sector 1							
1.5	52.589	147.88	156.96	70.4	10.222	-1.7049	-4.8854
source = 3; node 41, sector 1							
1.5	2.0548	-396.17	396.18	270.3	1,552.	-1.1E-02	-25.894
source = 4; node 61, sector 1							
1.5	303.03	210.44	368.93	34.8	9.0377	-1.9301	-4.4515
Parallel combination of all sources.							
1.5	51.0133	65.6595	83.1476	52.2	3.3962	-5.2711	-1.531

KSJX - Tower 4 Detuning

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C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012
Analysis\ksjx-1c-detuning4  06-14-2012   13:52:13

KZSF 1370 San Jose

GEOMETRY
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire  caps Distance     Angle        Z            radius      segs
 1    none 0            0            0            .218         20
           0            0            116.5
 2    none 135.         61.          0            .218         20
           135.         61.          117.75
 3    none 90.          341.         0            .218         20
           90.          341.         115.75
 4    none 100.         251.         0            .218         20
           100.         251.         118.

Number of wires          =  4
          current nodes  =  80

                          minimum                  maximum
Individual wires       wire    value             wire  value
segment length          3      5.7875             4    5.9
radius                  1      .218               1    .218


ELECTRICAL DESCRIPTION
Frequencies (MHZ)
     frequency                 no. of  segment length (wavelengths)
 no. lowest       step          steps   minimum        maximum
 1   1.5          0              1      .0160764       .0163889

Sources
source node    sector  magnitude      phase          type
 1      1       1      2,978.97       70.1           voltage
 2      21      1      1,212.2        260.3          voltage
 3      41      1      1,147.35       177.4          voltage
 4      61      1      878.916        348.6          voltage

C:\Muticultural Stations\KSJX and KZSF Rebuild\NEW 6-7-2012
Analysis\ksjx-1c-detuning4  06-14-2012   13:52:13
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IMPEDANCE
   normalization = 50.
freq      resist    react     imped     phase     VSWR      S11       S12
(MHZ)     (ohms)    (ohms)    (ohms)    (deg)               dB        dB
source =  1; node 1, sector 1
1.5       193.36    261.36    325.12    53.5      11.101    -1.5691   -5.1823

source =  2; node 21, sector 1
1.5       -49.483   300.78    304.82    99.3      ****      ****      ****

source =  3; node 41, sector 1
1.5       55.731    114.53    127.37    64.1      6.5669    -2.6661   -3.3842

source =  4; node 61, sector 1
1.5       5.0165    -384.4    384.43    270.7     599.17    -2.9E-02  -21.769
```

Item 5

Summary of Post Construction Certified Array Geometry- KSJX

Because the KSJX antenna system was previously licensed and there has been no change in the theoretical antenna parameters, a post-construction survey is not required per the FCC Public Notice DA 09-2340. (October 29, 2009)

Item 6

Sampling System Measurements - KSJX

Impedance measurements were made of the antenna monitor sampling system using an AIM network analyzer in a calibrated measurement system. The measurements were made looking into the antenna monitor ends of the sampling lines for two conditions – with and without the sampling lines connected to the sampling transformers at the antenna tuning units.

The following table shows the frequency closest to the carrier frequency where series resonance – zero reactance corresponding with low resistance – was found. As frequencies of resonance occur at odd multiples of 90 degrees electrical length, the sampling line length at the resonant frequency below carrier frequency – which is the closest one to the carrier frequency – was found to be 270 electrical degrees. The electrical length at carrier frequency appearing in the table below was calculated by ratioing the carrier frequency to the resonant frequency.

Tower	Sampling Line Open-Circuited Resonance (kHz)	Sampling Line Electrical Length at 1500 kHz Degrees	1500 kHz Measured Impedance with Sample Transformer Connected
1	1146.35	353.30	50.24 -j1.1
2	1145.55	353.54	50.89-j1.3
3	1145.50	353.56	50.42-j1.4
4	1144.1	353.99	50.89-j0.9

The sampling line lengths meet the requirement that they be equal in length within 1 electrical degree.

In order to determine the characteristic impedance values of the sampling lines, open-circuited measurements were made with frequencies offset to produce +/- 45 degrees of electrical

length from resonance. The characteristic impedance was calculated using the following formula, where R1 +j X1 and R2 +j X2 are the measured impedances at the +45 and –45 degree offset frequencies, respectively:

$$Zo = [(R_1^2 + X_1^2)^{½} \times (R_2^2 + X_2^2)^{1/2}]^{1/2}$$

Tower	-45° Offset Frequency (kHz)	-45° Measured Impedance (Ohms)	+45° Offset Frequency (kHz)	+45° Measured Impedance (Ohms)	Calculated Characteristic Impedance (Ohms)
1	955.29	5.30 -j50.05	1337.41	7.94+j50.1	50.53
2	954.59	5.38 -j50.25	1334.48	8.0+j50.01	50.59
3	954.58	5.25-j50.22	1336.42	7.84+j50.0	50.55
4	953.42	5.38-j50.17	1334.78	8.03+j50.1	50.60

The sampling line measured characteristic impedances meet the requirement that they be equal within 2 ohms.

Item 7

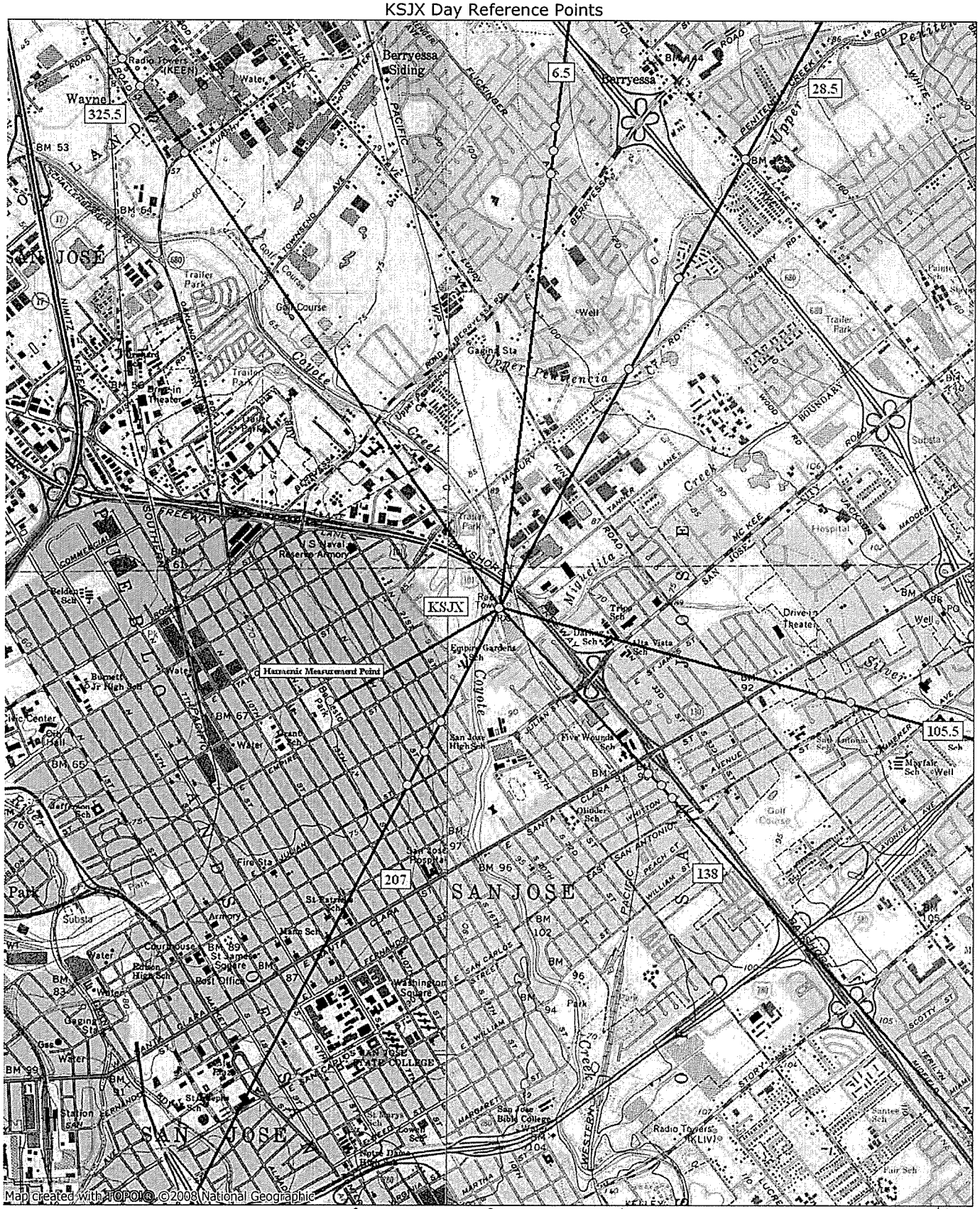
Reference Field Strength Measurements - KSJX

Reference field strength measurements were made along radials at the azimuths with radiation value limits specified on the station license and, additionally, on the radial of the line of the towers in the maximum. The transmitter power was at 5.4 kW (antenna common point current 10.4 Amps) nighttime and 10.5 kW (antenna common point current 14.49 Amps) daytime for these measurements.

Measurements were made using a Potomac Instruments field strength meter, model FIM-41. This meter has been recently checked against other more recently calibrated meters and found to be well within its normal tolerances.

The measured field strengths and descriptions and GPS coordinates for the reference measurement points are shown on the following pages.

KSJX Day Reference Points



NATIONAL GEOGRAPHIC

0 5 MILES
1000 0 1000 2000 3000 4000 5000 FEET
1 .5 0 KILOMETERS 1
1000 0 METERS 1000

TN MN
14°
09/19/12

KSJX, San Jose

1500 kHz - 10,000 Watts; DA-D

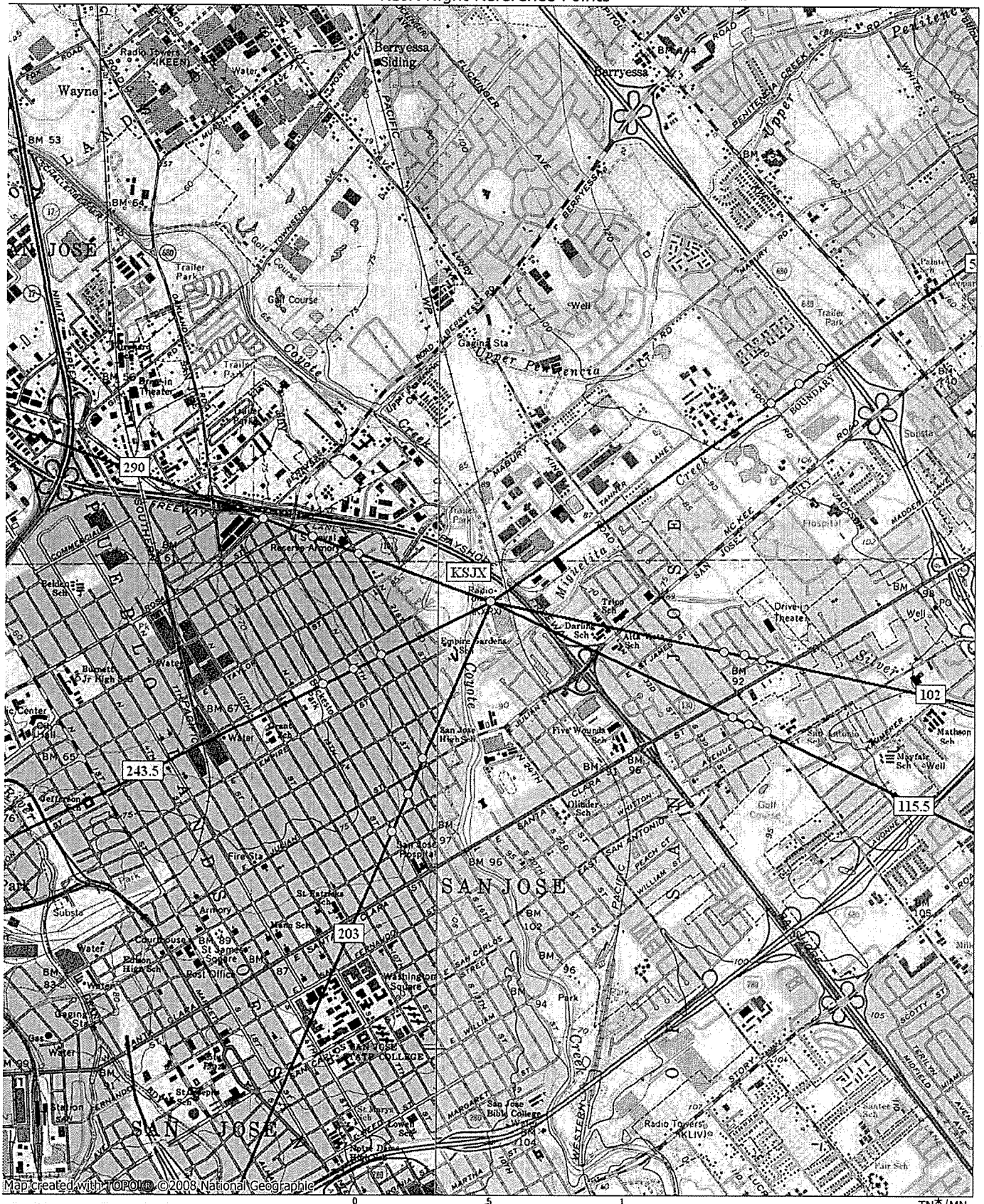
Reference Field Strength Measurements - Daytime

Radial	Point	Distance (km)	Field (mv/m)	Coordinates (NAD 83)		Description
6.5	1	2.66	185	37 22.901	121 52.133	SW Corner; Flickenger & Imwalle
	2	2.80	200	37 22.961	121 52.130	2105 Charger Drive
	3	2.94	190	37 23.039	121 52.125	2146 Hikido
28.5	1	1.65	290	37 22.237	121 51.782	SW Corner; Mabury & Educational Park Drive
	2	2.28	252	37 22.553	121 51.623	824 Jackson
	3	3.11	152	37 22.911	121 51.359	Rear; 989 Gilcrest
105.5	1	2.01	460	37 21.171	121 51.044	SW Corner; McCreary & Stowe
	2	2.19	425	37 21.148	121 50.918	180 Oakland
	3	2.39	320	37 21.117	121 50.778	222 Sunset
138	1	1.34	520	37 20.892	121 51.768	1394 Shortridge
	2	1.45	410	37 20.852	121 51.720	1405 E. San Fernando
	3	1.55	460	37 20.809	121 51.667	1419 Whitten
207	1	0.77	980	37 21.088	121 52.581	396 20th Street
	2	0.98	470	37 20.985	121 52.650	340 18th Street
	3	1.21	1325	37 20.884	121 52.728	SE Corner; 16th Street & Julian
325.5	1	3.36	140	37 23.007	121 53.696	Shopping Center; Murphy & Oakland Road
	2	3.85	175	37 23.182	121 53.824	200 feet East; Oakland Road & McKay
	3	4.06	152	37 23.268	121 53.913	100 feet East; Oakland Road & Wayne

Measurements were made September 18, 2012 by Robert F. Turner

Potomac Instruments FIM-41, SN 1205 calibrated 16 July, 1999.

KSJX Night Reference Points



NATIONAL GEOGRAPHIC

0 5 MILES
1000 0 1000 2000 3000 4000 5000 FEET
1 5 0 KILOMETERS 1
1000 0 METERS 1000

TN MN
14°
09/19/12

KSJX, San Jose

1500 kHz - 5000 Watts; DA-N

Reference Field Strength Measurements - Nighttime

Radial	Point	Distance (km)	Field (mv/m)	Coordinates (NAD 83)		Description
54.5	1	2.08	75	37 22.220	121 51.277	2303 Ashglen
	2	2.29	65	37 22.279	121 51.194	591 Breezyglen Court
	3	2.46	45	37 22.333	121 51.117	2459 Ridgeglen Way
102	1	1.44	110	37 21.303	121 51.396	95 Melrose
	2	1.58	44	37 21.282	121 51.310	67 Balboa
	3	1.68	142	37 21.277	121 51.251	NW Corner; Beverly & Magellen
115.5	1	1.63	47	37 21.088	121 51.357	1669 Shortridge
	2	1.75	44	37 21.060	121 51.278	1685 E. San Fernando
	3	1.85	74	37 21.029	121 51.221	NW Corner; King & Whitten
203	1	1.05	680	37 20.995	121 52.626	320 18th Street
	2	1.27	430	37 20.835	121 52.688	254 16th Street
	3	1.51	310	37 20.718	121 52.753	188 14th Street
243.5	1	0.73	940	37 21.275	121 52.797	563 19th Street
	2	0.92	510	37 21.240	121 52.911	Driveway 570 17th Street
	3	1.12	780	37 21.181	121 53.027	Opposite 570 15th Street
290	1	0.85	1020	37 21.401	121 52.881	SE Corner; 21st & Marianellict
	2	1.15	640	37 21.679	121 53.090	871 19th Street
	3	1.46	580	37 21.718	121 53.271	SE Corner; Berryessa & N17th Street

Measurements were made September 18, 2012 by Robert F. Turner

Potomac Instruments FIM-41, SN 1205 calibrated 16 July, 1999.

Item 8

Direct Measurement of Power - KSJX

Common point impedance measurements were made using a Hewlett Packard 8751A network analyzer in a calibrated measurement system. The measurements were made at the phasor cabinet input jack adjacent to the common point current meter that is used to determine operating power. The impedance measured at this point was adjusted to a value of 50 +/- j0.

Item 9

Antenna Monitor and Sampling System - KSJX

The antenna monitor is a Potomac Instruments model AM-1901. The sample transformers are connected through equal lengths of ⅜ inch foam heliax solid outer conductor transmission lines (Andrew LDF cable) to the antenna monitor. The two sample lines are routed to the towers such that they are subject to similar environmental conditions.

The antenna monitor was checked by placing the amplified network analyzer output through a sample transformer. A "T" connector was placed on the sample transformer and the two outputs of the "T" were fed into the antenna monitor inputs 1 & 2. Both inputs read 0 degrees and a ratio of 100.

The sample transformers were tested by feeding their outputs configured as described above into the A and B inputs of the network analyzer.

All transformers TCT-1 0.5 V/A

Serial #	2152	940	939	2158
Magnitude	0.989	0.986	1.009	reference
Phase	+0.088	+0.014	+0.77	reference

These values are well within the manufacturer's rated tolerance of +/- 2% amplitude and +/- 2 degrees phase.

Diplex Harmonic Measurement Worksheet

Station 1	KSJX	Frequency	1500	KHz	Power	10000	Mode	DA-D
Station 2	KZSF	Frequency	1370	KHz	Power	5000	Mode	DA-1
Date	08/30/12	Time	8:15 AM	Station 1 Field Strength			850	mV/m

Harmonic Calculations			Notes	Reading in mV/m	Value	FCC Limit	
1	F1 + F2	2870		0.040	-86.5	-80	dBc
2	F1 + 2(F2)	4240		0.010	-98.6	-80	dBc
3	F2 + 2(F1)	4370		0.035	-87.7	-80	dBc
4	2(F1) - F2	1630		0.013	-96.3	-80	dBc
5	2(F2)	2740		0.030	-89.0	-80	dBc
6	2(F2) - F1	1240	2			-80	dBc
7	2(F1) - 2(F2)	260	1			-80	dBc
8	2(F1) + 2(F2)	5740	1			-80	dBc
9	2(F1)	3000		0.025	-90.6	-80	dBc
10	3(F1)	4500		0.013	-96.3	-80	dBc
11	3(F1)-F2	3130		0.015	-95.1	-80	dBc
12	3(F2)	4110		0.010	-98.6	-80	dBc
13	3(F2)-F1	2610		0.017	-94.0	-80	dBc
14	3(F1)-(2)F2	1760		0.020	-92.6	-80	dBc
15	3(F2)-(2)F1	1110	2			-80	dBc

1	Frequency exceeds FIM capabilities
2	Frequency cannot be measured/Other station present
3	No Signal Present

Measurement Location: GPS: 37° 21.151 / 121° 53.017 - East side of Bakesto Park. Approximately 0.75 miles from KSJX at 243-degrees true.

Diplex Harmonic Measurement Worksheet

Station 1	KSJX	Frequency	1500	KHz	Power	5000	Mode	DA-N
Station 2	KZSF	Frequency	1370	KHz	Power	5000	Mode	DA-1
Date	09/18/12	Time	10:30 AM	Station 1 Field Strength			750	mV/m

	Harmonic Calculations		Notes	Reading in mV/m	Value	FCC Limit	
1	F1 + F2	2870		0.050	-83.5	-80	dBc
2	F1 + 2(F2)	4240		0.040	-85.5	-80	dBc
3	F2 + 2(F1)	4370		0.019	-91.9	-80	dBc
4	2(F1) - F2	1630		0.016	-93.4	-80	dBc
5	2(F2)	2740		0.027	-88.9	-80	dBc
6	2(F2) - F1	1240	2			-80	dBc
7	2(F1) - 2(F2)	260	1			-80	dBc
8	2(F1) + 2(F2)	5740	1			-80	dBc
9	2(F1)	3000		0.018	-92.4	-80	dBc
10	3(F1)	4500		0.014	-94.6	-80	dBc
11	3(F1)-F2	3130		0.024	-89.9	-80	dBc
12	3(F2)	4110		0.016	-93.4	-80	dBc
13	3(F2)-F1	2610		0.026	-89.2	-80	dBc
14	3(F1)-(2)F2	1760		0.022	-90.7	-80	dBc
15	3(F2)-(2)F1	1110	2			-80	dBc

1	Frequency exceeds FIM capabilities
2	Frequency cannot be measured/Other station present
3	No Signal Present

Measurement Location: GPS: 37° 21.151 / 121° 53.017 - East side of Bakesto Park. Approximately 0.75 miles from KSJX at 243-degrees true.

APPENDIX A: **License Document BL-950203AA**

APPENDIX B: **FCC Form 302-AM**

FCC Form 352
May 1988

UNITED STATES OF AMERICA
FEDERAL COMMUNICATIONS COMMISSION

File No. : BZ-950120AE

AM BROADCAST STATION LICENSE

Call Sign : KSJX

LICENSEE: Baycom San Jose, L.P.

1. Community of License. . . : San Jose, CA

2. Transmitter location. . . . . : 501 Wooster
San Jose, CA

North Latitude. . . . . : 37° 21' 28"
West Longitude . . . . . : 121° 52' 17"

3. Transmitter(s): Type Accepted. See Sections 73.1660, 73.1665 and 73.1670 of the Commission's rules)

4. Main Studio Location: *(See Section 73.1125)*
1420 Koll Circle
San Jose, CA

5. Remote control location
1420 Koll Circle
San Jose, CA

6. Antenna and ground system:
Attached

7. Obstruction marking and lighting specifications - FCC Form 715, paragraphs: 1, 3, 11 & 21

8. Frequency. . . . . : 1500 kHz

9. Nominal power (kW). . . . . : 10.0 Day 5.0 Night

Antenna input power (kW) :

10.5 Day ☐ Non-directional antenna : current 14.23 amperes: resistance 52.0 ohms.
☒ Directional antenna :

5.4 Night ☐ Non-directional antenna : current 10.19 amperes: resistance 52.0 ohms.
☒ Directional antenna :

10. Hours of operation : BP-880212AH

11. Conditions. . . . . :

Subject to the provisions of the Communications Act of 1934, as amended, subsequent Acts, Treaties, and Commission rules made thereunder, and further subject to conditions set forth in this license,[1] the LICENSEE is hereby authorized to use and operate the radio transmitting apparatus herein described for the purpose of broadcasting for the term ending 3 A.M. Local Time
December 1, 1997

The Commission reserves the right during said license period of terminating this license or making effective any change, or modification of this license which may be necessary to comply with any decision of the Commission rendered as a result of any hearing held under the rules of the Commission prior to the commencement of this license period.

The license is issued on the licensee's representation that the statements contained in the licensee's application are true and that the undertakings therein contained so far as they are consistent herewith, will be carried out in good faith. The licensee shall, during the term of this license, render such broadcasting service as will serve the public interest, convenience,or necessity to the full extent of the privileges herein conferred.

This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequency designated in the license beyond the term hereof, nor in any other manner than authorized herein. Neither the license nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. This license is subject to the right f or control by the Government of the United States conferred by section 606 of the Communications Act of 1934, as amended.

EAL:rao

[1] This license consists of this page and pages 2, 3 & 4

Dated: FEB 23 1995

FEDERAL COMMUNICATIONS COMMISSION

FCC Form 353-A
June 1980

File No.: BZ-950120AE **Call Sign:** KSJX

1. **DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM**

No. and Type of Elements: Four uniform cross-section, guyed, series-excited steel radiators. A communications-type omnidirectional antenna is side-mounted at the top of E(#2) tower. Theoretical RMS: 710.91 mV/m, Night; 959.17 mV/m, Day. Augmented RMS: 788.8 mV/m, Night. 1023.47 mV/m, Day. All values @ 1 km. Q = 31.62, Day; 22.36, Night.

Height above Insulators: 59.44 m (107.06°)

Overall Height: 60.35 m

Spacing and Orientation: From reference tower #1, tower #2 is spaced 74.98 m (135°) on a line bearing 61° True; tower #3 is spaced 50.0 m (90°) on a line bearing 341° True; tower #4 is spaced 55.55 m (100°) True on a line bearing 251° True.

Non-Directional Antenna: None used.

Ground System consists of 120-equally spaced buried copper radials plus 7.32m by 7.32m ground screen about the base of each tower. Each radial is 60.96 m in length except where limited by property boundary. Overalapping radials shortened and bonded to copper straps.

2. **THEORETICAL SPECIFICATIONS**

Towers:		#1(C)	#2(E)	#3(N)	#4(W)
Phasing:	Night:	0°	69°	---	-98°
	Day:	0°	165°	107°	---
Field Ratio:	Night:	1.00	0.40	---	0.65
	Day:	1.00	0.45	0.73	---

3. **OPERATING SPECIFICATIONS**

Phase Indication*:					
	Night:	0°	70°	---	-83°
	Day:	0°	80.5°	67.5°	---
Antenna Base Current Ratio:					
	Night:	1.000	0.35	---	0.639
	Day:	1.000	0.636	1.205	---
Antenna Monitor Sample Current Ratio:					
	Night:	1.000	0.345	---	0.645
	Day:	0.5	0.335	0.605	---

*** As indicated by** Potomac Instruments AM-19 (204) Antenna Monitor.
Antenna sampling system approved under Section 73.68 (b) of the Rules.

DESCRIPTION OF AND FIELD INTENSITY AT MONITORING POINTS:

Direction of 51° True North. From the transmitter site drive NE on McKee Road 2.5 miles to White Road. Turn left (NW) on White Road for 0.35 mile to Patt Avenue. Turn left (SW) on Patt Avenue and continue 0.35 mile to the Painter School play area. Enter the play area (through the parking lot) and the monitor point lies approximately 25 feet beyond the parking lot, into the hard surfaced play area. Distance to the array from this point is 2.02 miles. The field intensity measured at this point should not exceed 14.8 mV/m, Nighttime.

Direction of 101° True North. From the transmitter site go NE on McKee Road 1.2 miles to Jackson Avenue and turn right (SE). Proceed 1.55 miles to Story Road and turn left (NE). Proceed 0.6 mile to McGinness and turn right (SE). Proceed 0.15 mile to Sussex and turn right (SW). Proceed 0.1 mile on Sussex to monitor point on north side of Sussex between 2729 and 2735 at the curb. Distance to the array is 2.67 miles. The field intensity measured at this point should not exceed 39.4 mV/m, Nighttime.

Direction of 111° True North. From the transmitter site go NE on McKee Road 1.2 miles to Jackson Avenue and turn right (SE). Proceed 1.55 miles to Story Road and turn left (NE). Proceed 0.4 mile to the intersection of Capitol Expressway. Turn right (SE) on the expressway and proceed one mile to the intersection of Cunningham Avenue. Turn left (NE) on Cunningham Avenue and proceed 0.15 mile to Wonderama Drive. Turn left (NW) on Wonderama Drive and proceed 0.1 mile to the corner of Supreme Drive. Take the measurement on the east side of Wonderama Drive at the P.G. & E. underground utility vault (#J-568) opposite the school athletic field and fifty feet north of street lamp (#11C 155). Distance to the array from this point is 3.35 miles. The field intensity measured at this point should not exceed 33.9 mV/m, Nighttime.

Direction of 5° True North. From the transmitter site go NE on McKee Road 1.95 miles to Capitol Avenue. Turn left (NW) on Capitol Avenue and continue 2.1 miles to Old Post Way. Turn left (NW) 0.1 mile to fire hydrant #8628, on the south side of Old Post Way, at the corner of Old Park Place. The distance to the array from this fire hydrant is 2.33 miles. The field intensity measured at this point should not exceed 96.4 mV/m, Daytime.

Direction of 31° True North. From the transmitter site go NE on McKee Road 1.95 miles to Capitol AVenue. Turn left (NW) on Capitol Avenue and continue 1.0 miles to the East Side Union High

DESCRIPTION TO AND FIELD INTENSITY AT MONITORING POINTS (cont'd):

district building. This monitor point is over a P.G. & E. underground utility vault, located on the sidewalk along the east side of Capitol Avenue in front of the East Side Union High School building, approximately 48 feet south of street lamp #8N310. Distance to the array from this point is 1.9 miles. The field intensity measured at this point should not exceed 90.1 mV/m, Daytime.

Direction of 325° True North. From the transmitter site go NW on US 101 (Bayshore Freeway) approximately 1.6 miles to 13th Street/Oakland Road (Old Oakland Highway). Turn right (N) and drive approximately 1.3 miles to Murphy Avenue. Turn right (NE) and proceed 0.05 mile to monitor point on right side of Murphy Avenue. The distance to the array is 2.05 miles. The field intensity measured at this point should not exceed 53.3 mV/m, Daytime.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

Multicultural Radio Broadcasting Licensee, LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

[X] Station License [X] Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
				Night	Day
KSJX	not applicable	1500	unlimited	5.0	10.0

2. Station location

State	City or Town
California	San Jose

3. Transmitter location

State	County	City or Town	Street address (or other identification)
CA	Santa Clara	San Jose	501 Wooster St.

4. Main studio location

State	County	City or Town	Street address (or other identification)
CA	Santa Clara	San Jose	501 Wooster St.

5. Remote control point location (specify only if authorized directional antenna)

State	County	City or Town	Street address (or other identification)
CA	Santa Clara	San Jose	501 Wooster St.

6. Has type-approved stereo generating equipment been installed? [ ] Yes [X] No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68? [X] Yes [ ] No [ ] Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed. Exhibit No. Eng. Rpt.

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system	RF common point or antenna current (in amperes) without modulation for day system
10.4	14.49
Measured antenna or common point resistance (in ohms) at operating frequency Night: 50.0 Day: 50.0	Measured antenna or common point reactance (in ohms) at operating frequency Night: +/-j0 Day: +/-j0

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
1 C	0	0	1.0	1.0	not	not
2 E	63.3	140.8	0.405	0.43	required	required
3 N	unused	94.8	unused	1.02		
4 W	-78.9	unused	0.521	unused		

Manufacturer and type of antenna monitor: Potomac Instruments AM-1901

SECTION III - Page 2

9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
uniform cross section guyed towers *see item 11	59.44	60.4	60.4 (NO LIGHTING	Exhibit No. DNA

Excitation [x] Series [ ] Shunt

Geographic coordinates to nearest second. For directional antenna give coordinates of center of array. For single vertical radiator give tower location.

North Latitude	West Longitude
37° 21' 28"	121° 52' 17"

If not fully described above, attach as an Exhibit further details and dimensions including any other antenna mounted on tower and associated isolation circuits. Exhibit No. DNA

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system. Exhibit No. ON FILE

10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

No change from originally licensed system

11. Give reasons for the change in antenna or common point resistance.

No change -rebuild following destruction of site by fire

*ASR #s 1215674, 1215676, 1215678, 1215679
no lighting or marking required

I certify that I represent the applicant in the capacity indicated below and that I have examined the foregoing statement of technical information and that it is true to the best of my knowledge and belief.

Name (Please Print or Type)	Signature (check appropriate box below)
Benj. F. Dawson III, P.E.	
Address (include ZIP Code)	Date
Hatfield & Dawson Consulting Engineers 9500 Greenwood Avenue North Seattle, WA 98103	November 20, 2012
	Telephone No. (Include Area Code) 206 783 9151

[ ] Technical Director

[x] Registered Professional Engineer

[ ] Chief Operator

[ ] Technical Consultant

[x] Other (specify) Consulting Engineer