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PD

Federal Communications Commission
Washington, D. C. 20554

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

FOR FCC USE ONLY

FCC 302-AM
APPLICATION FOR AM BROADCAST STATION LICENSE

(Please read instructions before filling out form.

FOR COMMISSION USE ONLY
FILE NO. BNML-20100714ACX

SECTION I - APPLICANT FEE INFORMATION

1. PAYOR NAME (Last, First, Middle Initial)
Cohn and Marks LLP

FILED/ACCEPTED
JUL 14 2010
Federal Communications Commission
Office of the Secretary

MAILING ADDRESS (Line 1) (Maximum 35 characters)
1920 N Street, N.W.

MAILING ADDRESS (Line 2) (Maximum 35 characters)
Suite 300

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
Washington	D.C.	20036-1622

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
202-452-4817	KHTS	

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): Direct Measurement of Power

C. If Yes, provide the following information:

6008913303

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
MMR	0001	$ 615.00	

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
MOR	0001	$ 705.00	

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
	$ 1320.00	

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Jeri Lyn Broadcasting, Inc.		
MAILING ADDRESS 27225 Camp Plenty Road, Suite 8		
CITY Santa Clara	STATE CA	ZIP CODE 91351

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
KHTS	Canyon County, 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. 1

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. 1

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. 1

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	
Jeri Lyn Broadcasting, Inc.		
Title: President	Date: 6/ 30 /2010	Telephone Number: (661) 298-1220

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.

Exhibit 1
Response to Form 302-AM
Section II (Questions 3, 4, and 5)

On March 18, 2010, the Commission granted Jeri Lyn Broadcasting, Inc. ("Jeri Lyn") an extension of its STA, to and through September 18, 2010, to continue to operate Station KHTS at variance from licensed values and/or with reduced power. See BESTA-20100128AGQ.

Jeri Lyn's consulting engineers (Hatfield & Dawson) have completed a method of moments proof of performance and other technical work and adjusted the station's directional antenna to match the modeled operating parameters as explained in the foregoing STA request and have prepared a report (with the STA request) which is supplied with this application.

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

JERI LYN BROADCASTING, INC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

[X] Station License [ ] 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
KHTC/S		1220	UNL	1	0.5

2. Station location

State	City or Town
CA	CANYON COUNTRY

3. Transmitter location

State	County	City or Town	Street address (or other identification)
CA	LOS ANGELES	SAUGUS	15500 W. SIERRA HIGHWAY

4. Main studio location

State	County	City or Town	Street address (or other identification)
CA	LOS ANGELES	CANYON COUNTRY	27225 Camp Plenty Rd

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

State	County	City or Town	Street address (or other identification)
CA	LOS ANGELES	CANYON COUNTRY	27225 Camp Plenty Rd

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
3.29	4.65
Measured antenna or common point resistance (in ohms) at operating frequency	**Measured antenna or common point reactance (in ohms) at operating frequency**
Night: 50 Day: 50	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
Tower 1 North	0.312	0.312	-76.1°	-76.1°	No	
Tower 2 Center	1.000	1.000	0.0°	0.0°	Longer	
Tower 3 South	0.495	0.495	91.4°	91.4°	Required	

Manufacturer and type of antenna monitor: GORMAN-REDLICH CMR

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 STEEL	54.9 METERS	56 METERS	56 METERS	Exhibit No.

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
34 ° 27 ' 55 "	118 ° 24 ' 07 "

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.

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

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

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

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)
STEPHEN S. LOCKWOOD, P.E.	
Address (include ZIP Code) HATFIELD & DAWSON CONSULTING ENGINEERS 9500 GREENWOOD AVE N SEATTLE, WA 98103	Date 7 May 2010
	Telephone No. (Include Area Code) (206) 783-9151

[ ] Technical Director

[X] Registered Professional Engineer

[ ] Chief Operator

[ ] Technical Consultant

[ ] Other (specify)

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JAMES B. HATFIELD, PE
PAUL W. LEONARD, PE
CONSULTANTS

MAURY L. HATFIELD, PE
(1942-2009)

Engineering Report:

APPLICATION FOR STATION LICENSE

Proof of Performance

KHTS, 1220 kHz

1.0 kW Daytime 0.5 kW Nighttime DA-2

Facility ID 58521

Canyon Country, California

Jeri Lyn Broadcasting, Inc

May 2010

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Appendix A - FCC Form 302

Purpose of Application

This Engineering Report is part of an application for Direct Measurement of Power by Jeri Lyn Broadcasting, Inc, licensee of KHTS-AM, Canyon Country, CA.

Background

This station is in a very small valley surrounded by to extremely rugged mountainous terrain, making valid measurement of field strength on some radials unattainable. This station has operated under several STAs from its inception due in part to the location of three high voltage transmission lines within this narrow valley. The ability to complete a traditional proof or partial proof of performance and maintain the monitor point limits has proven impossible. It was therefore decided that a Method of Moments Computer Model proof, as authorized by §73.151(c) of the Commission's rules was a more suitable option for the re-licensing of KHTS.

KHTS employs a single direction antenna pattern with daytime power of 1.0 kW and nighttime power of 0.5 kW. The antenna monitor parameters are the same for both daytime and nighttime operation. The system was modeled using the licensed daytime power of 1.0 kW.

Information is provided herein demonstrating that the directional antenna parameters for the licensed pattern have been determined in accordance with the requirements of section §73.151(c) of the Commissions Rules. The system has been adjusted to produce antenna monitor parameters within ± 5 % of ratio and ± 3° of phase of the modeled values, as required by the Rules.

All antenna and sample system measurements used in this report were taken undersigned the early morning of 9 February 2010 and 4 May 2010.

Stephen S. Lockwood, P.E.

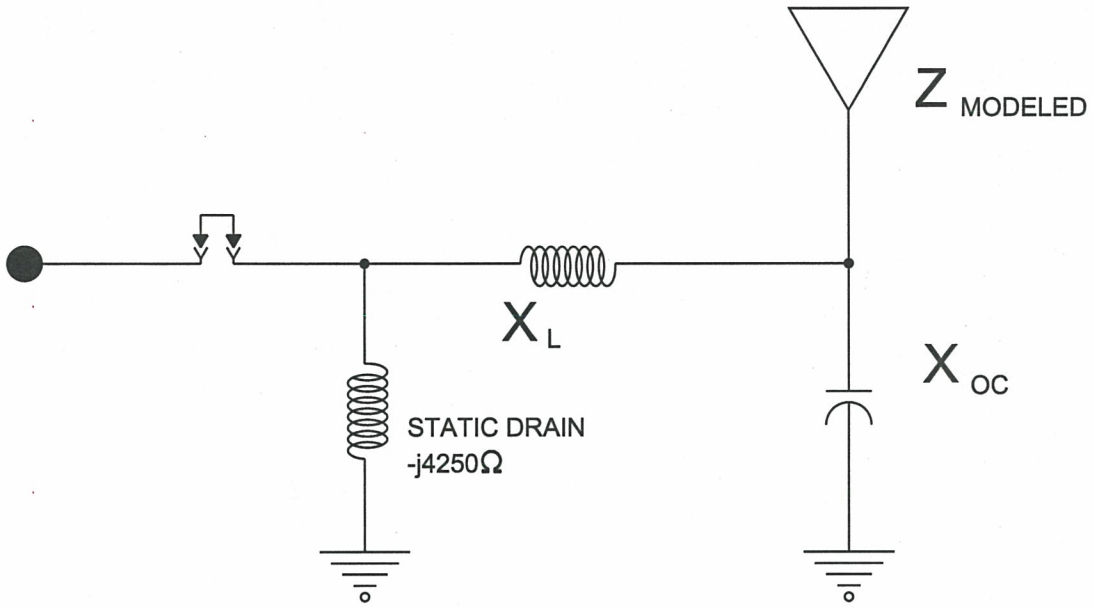
7 May 2010

ITEM 1 - Tower Impedance Measurements and Model Verification

Tower base Impedance measurements were made at the reference point at the output J-plugs, which are adjacent to the sample system toroidal current transformers, within the Antenna Tuning Units (ATUs). These measurements were made using an HP 8751A network analyzer, an ENI 403LA amplifier and custom manufactured directional couplers in a calibrated measurement system. The other towers within the array were in the open circuit condition with their respective J-plugs removed.

Standard electrical circuit calculations were used to relate the measured impedance ($Z_{ATU\ Measured}$) to the moment method base modeled impedance ($Z_{Modeled}$). X_L and X_C were calculated for the assumed stray base capacitance and lead inductance for each tower

The modeled ($Z_{ATU\ Modeled}$) and measured ($Z_{ATU\ Measured}$) base impedance at each ATU output J-plug with the other towers open circuited at their ATU output J-plugs agree within ± 2 ohm and ± 4 % for resistance and reactance.



TOWER	X_L (Ω)	X_{OC} (Ω)	$Z_{MODELED}$ (Ω)	$Z_{ATU\ MODELED}$ (Ω)	$Z_{ATU\ MEASURED}$ (Ω)
TOWER #1	+j33.1	-j620	38.4 +j9.2	38.7 +j39.9	40.5 +j39.7
TOWER #2	+j73.8	-j1600	23.7 -j34.1	22.3 +j39.8	23.9 +j 39.9
TOWER #3	+j33.2	-j1000	38.6 +j9.0	38.5 +j40.7	38.3 +j41.0

Bob Allen, H&D | 2/16/2010 10:20 AM | KHTS CIRCUIT MOM TABLE.dwg | PDF FILE: KHTS MOM TABLE.pdf

HATFIELD & DAWSON
CONSULTING ENGINEERS

ANALYSIS OF TOWER IMPEDANCE MEASUREMENTS TO VERIFY METHOD OF MOMENTS MODEL

RADIO STATION KHTS 02/2010

ITEM 2 - Derivation of Operating Parameters for Directional Antenna

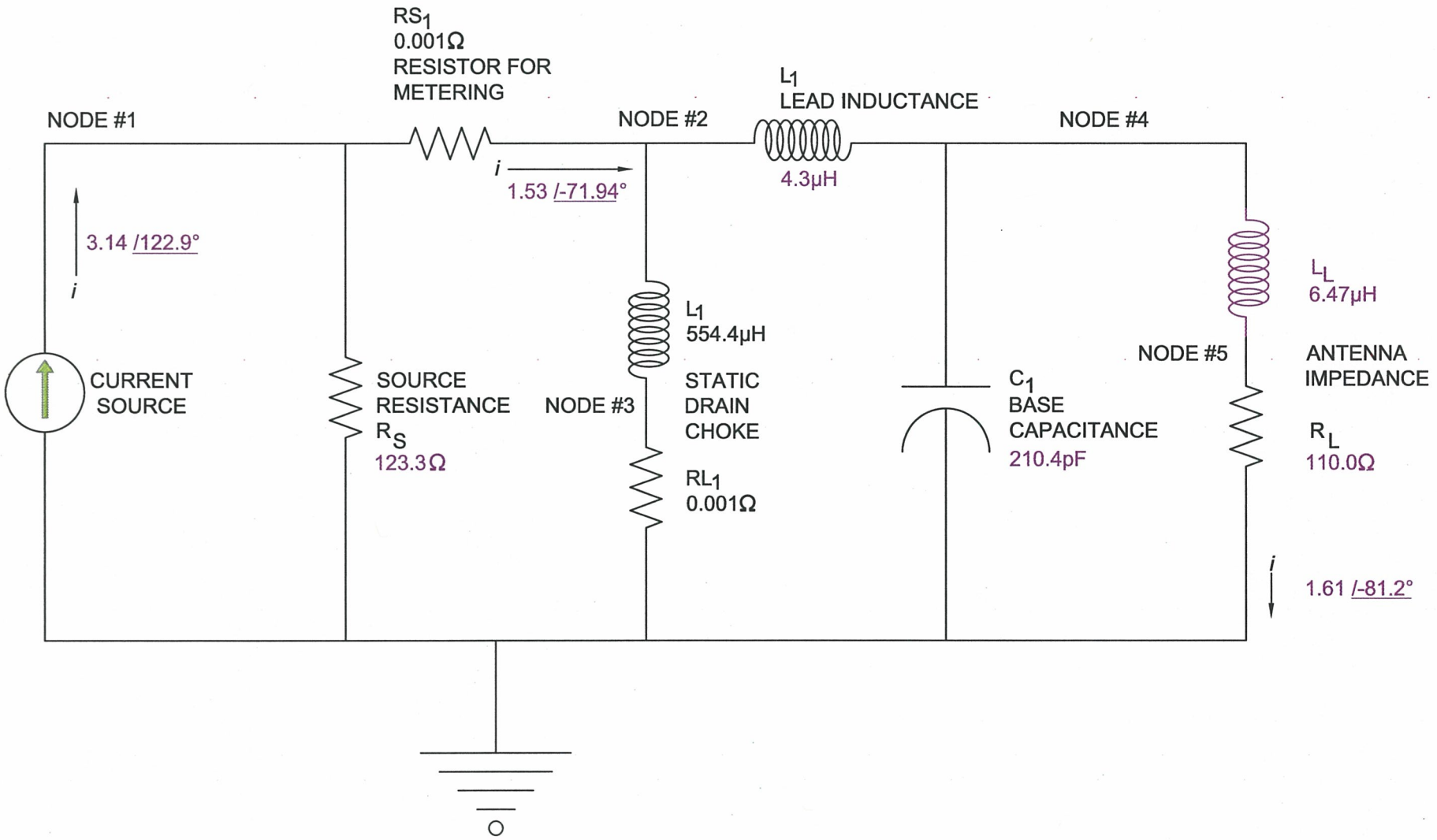
PSpice is an analog circuit simulator computer program. It calculates the voltages and currents of a circuit under a variety in different excitation circumstances, such as DC, AC, and in time using nodal and mesh analysis applications of Kirchhoff's laws (among other features). PSpice was used to model the circuit conditions around the tower bases to derive the antenna monitor parameters. Based on the tower base currents calculated by the moment method model. The 1987 MicroSim release of this program was used.

Input

```
## KHTS TOWER 1 BASE MODEL
.OPT LIST NOPAGE NODE NOMOD
.AC LIN 1 1220kHz 1220kHz

IIN      1        0        AC 3.1483 122.98
rs       1        0        123.3
rs1      1        2        .001

L1       2        3         554.4uH
RL1      3        0        .001
L2       2        4        4.3uH
C1       4        0        210.4pF

LL       4        5        6.47uH
RL       5        0        110.1ohms

.PRINT AC VM(2,0) VP(2,0) VM(4,0) VP(4,0)
.PRINT AC IM(L1) IP(L1) IM(L2) IP(L2)
.PRINT AC IM(RS1) IP(RS1) IM(RL) IP(RL)
.END
```

Output

FREQ	IM(RS1)	IP(RS1)	IM(RL)	IP(RL)
1.220E+06	1.531E+00	-7.194E+01	1.610E+00	-8.120E+01



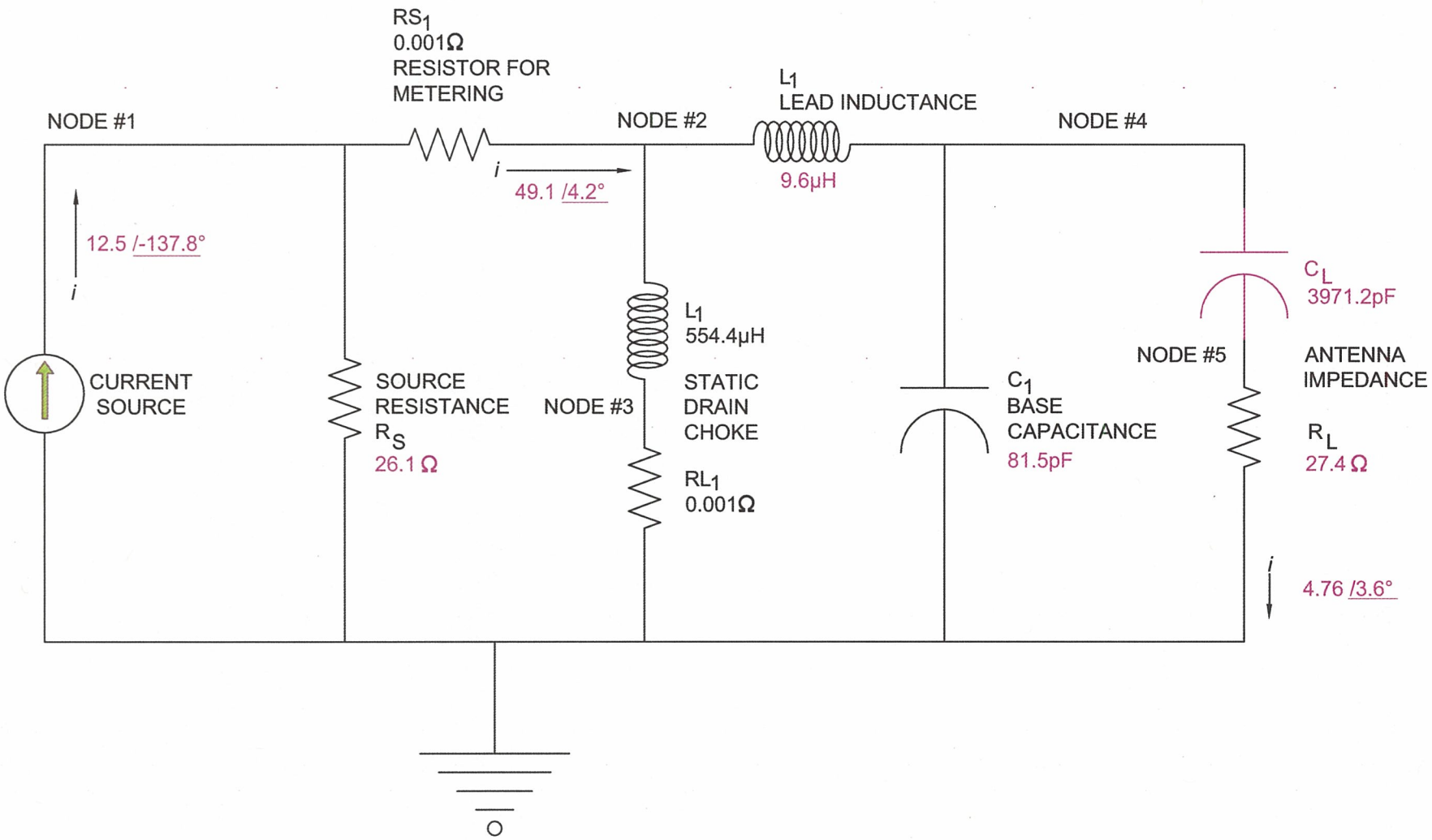
Hatfield & Dawson Consulting Engineers	KHTS(AM) TOWER #1 PSPICE MODEL KHTS (AM) 1220 kHz CANYON COUNTRY, CA 05/2010	REVISIONS:

Input

```
## KHTS TOWER 2 BASE MODEL
.OPT LIST NOPAGE NODE NOMOD
.AC LIN 1 1220kHz 1220kHz

IIN     1       0       AC 12.455 -137.8
rs      1       0       26.1
rs1     1       2       .001

L1      2       3        554.4uH
RL1     3       0       .001
L2      2       4       9.6uH
C1      4       0       81.5pF

CL      4       5       3971.2pF
RL      5       0       27.7ohms

.PRINT AC VM(2,0) VP(2,0) VM(4,0) VP(4,0)
.PRINT AC IM(L1) IP(L1) IM(L2) IP(L2)
.PRINT AC IM(RS1) IP(RS1) IM(RL) IP(RL)
##.PROBE
.END
```

Output

FREQ	IM(RS1)	IP(RS1)	IM(RL)	IP(RL)
1.220E+06	4.911E+00	4.235E+00	4.766E+00	3.619E+00



Hatfield & Dawson Consulting Engineers	KHTS(AM) TOWER #2 PSPICE MODEL KHTS (AM) 1220 kHz CANYON COUNTRY, CA 02/2010	REVISIONS:

Input

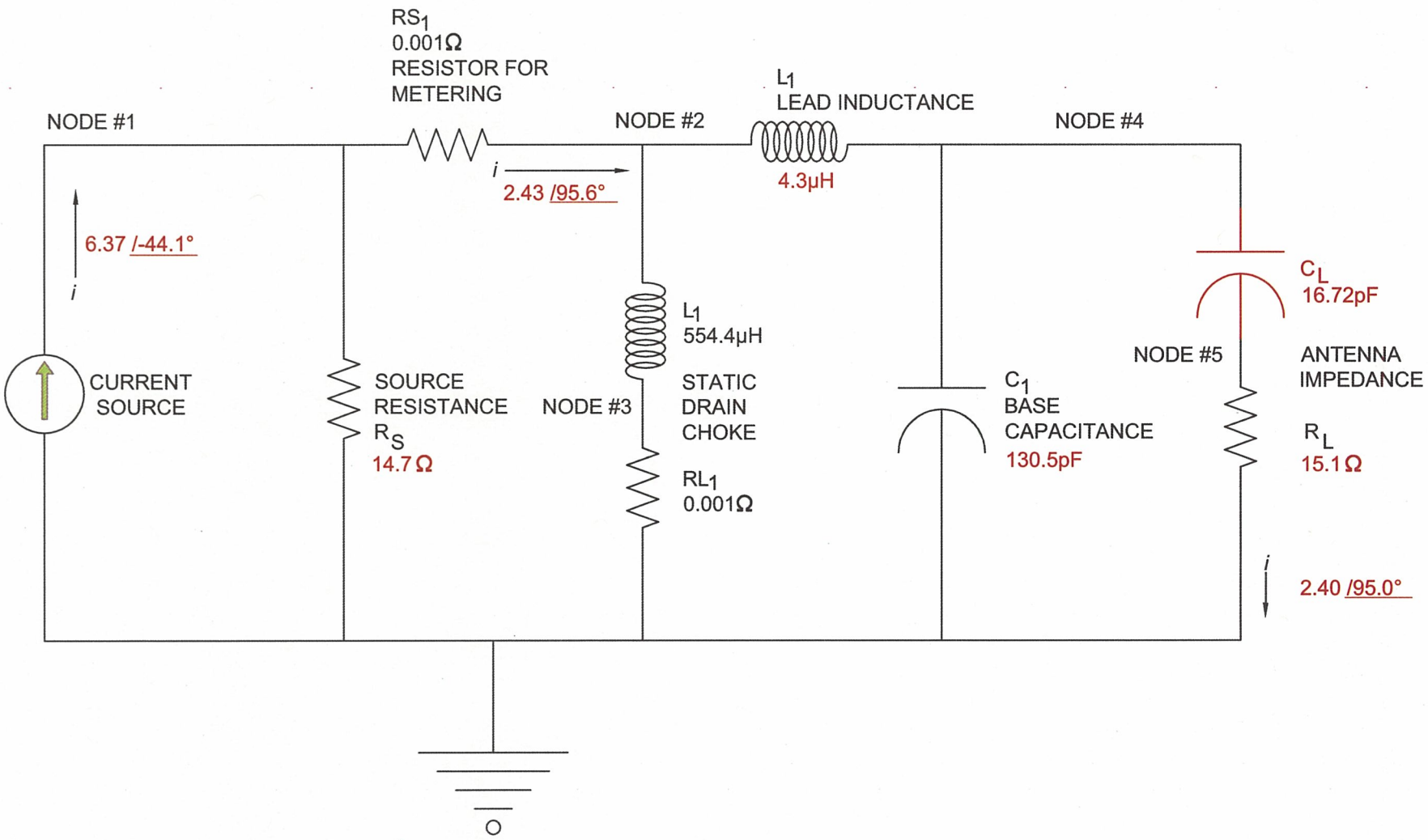
```
## KHTS TOWER 3 BASE MODEL
.OPT LIST NOPAGE NODE NOMOD
.AC LIN 1 1220kHz 1220kHz

IIN      1        0        AC 6.3684 -44.1
rs       1        0        14.7
rs1      1        2        .001

L1       2        3         554.4uH
RL1      3        0        .001
L2       2        4        4.3uH
C1       4        0        130.5pF

CL       4        5        16725pF
RL       5        0        15.1ohms

.PRINT AC VM(2,0) VP(2,0) VM(4,0) VP(4,0)
.PRINT AC IM(L1) IP(L1) IM(L2) IP(L2)
.PRINT AC IM(RS1) IP(RS1) IM(RL) IP(RL)
##.PROBE
.END
```

Output

```
  FREQ         IM(RS1)      IP(RS1)      IM(RL)       IP(RL)

  1.220E+06    2.430E+00    9.562E+01    2.397E+00    9.496E+01
```

Calculated Antenna Monitor Parameters

	Modeled Current Pulse	Sample Current Calculated (Amps)		Antenna Monitor Parameters	
		Magnitude	Phase (°)	Ratio	Phase (°)
Tower 1North	Node 1	1.53 ✓	-71.9° ✓	0.312	-76.1°
Tower 2 Center	Node 22	4.91 ✓	4.2° ✓	1.000	0.0°
Tower 3 South	Node 43	2.43 ✓	95.6° ✓	0.495	91.4°



Hatfield & Dawson Consulting Engineers	KHTS(AM) TOWER #3 PSPICE MODEL KHTS (AM) 1220 kHz CANYON COUNTRY, CA 02/2010	REVISIONS:

ITEM 3- Moment Method Model for Tower Driven Individually

Expert MININEC Broadcast Professional Version 12.5 was used to model the KHTS array. The antenna model was adjusted to match the measured matrix impedances. The wire coordinates used are in electrical degrees and wire radius is in meters The physical height of the triangular cross section towers is 80.4°, the face width is 24 inches. The following adjusted parameters were used:

- antenna electrical height on towers 1 & 3 was adjusted to 108.8% of the physical height (87.5°) and tower 2 was adjusted to 96.4% of the physical height (77.5°)
- wire radius of 147% (0.32 meters) of the equivalent radius of the tower was used
- 21 segments per antenna element (4.2° per segment for towers #1 & #3 and 3.7° for tower #2) were used

The site has considerable variations in tower base elevations, estimated to be on the order of 20 to 30 feet. Tower #2's height and radius were adjusted to account for this and other imperfect site conditions.

North Tower #1 Model

KHST, 1220 kHz, Canyon Country, CA

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.33	21
		0	0	87.5		
2	none	105.	163.	0	.42	21
		105.	163.	77.5		
3	none	210.	163.	0	.33	21
		210.	163.	87.5		

Number of wires = 3
current nodes = 63

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	2	3.69048	1	4.16667
radius	1	.33	2	.42

ELECTRICAL DESCRIPTION
Frequencies (KHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1,220.	0	1	.0102513	.0115741

Sources

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

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	22	0	-1,600.	0	0	0
2	43	0	-1,000.	0	0	0

IMPEDANCE
normalization = 50.

freq (KHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1,220.	38.391	9.1768	39.473	13.4	1.3996	-15.571	-.12212

Center Tower #2 Model

KHST, 1220 kHz, Canyon Country, CA

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.33	21
		0	0	87.5		
2	none	105.	163.	0	.42	21
		105.	163.	77.5		
3	none	210.	163.	0	.33	21
		210.	163.	87.5		

Number of wires = 3
current nodes = 63

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	2	3.69048	1	4.16667
radius	1	.33	2	.42

ELECTRICAL DESCRIPTION
Frequencies (KHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1,220.	0	1	.0102513	.0115741

Sources

source	node	sector	magnitude	phase	type
1	22	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-550.	0	0	0
2	43	0	-1,000.	0	0	0

IMPEDANCE
normalization = 50.

freq (KHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 22, sector 1							
1,220.	23.694	-34.143	41.559	304.8	3.2615	-5.5033	-1.4365

South Tower #3 Model

KHST, 1220 kHz, Canyon Country, CA

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.33	21
		0	0	87.5		
2	none	105.	163.	0	.42	21
		105.	163.	77.5		
3	none	210.	163.	0	.33	21
		210.	163.	87.5		

Number of wires = 3
current nodes = 63

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	2	3.69048	1	4.16667
radius	1	.33	2	.42

ELECTRICAL DESCRIPTION
Frequencies (KHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1,220.	0	1	.0102513	.0115741

Sources

source	node	sector	magnitude	phase	type
1	43	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-550.	0	0	0
2	22	0	-1,600.	0	0	0

IMPEDANCE
normalization = 50.

freq (KHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 43, sector 1							
1,220.	38.555	9.0289	39.598	13.2	1.3917	-15.715	-.11808

ITEM 4 - Moment Method Model for Directional Array

Input File:

```
KHST, 1220 kHz, Canyon Country, CA

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

wire  caps Distance     Angle        Z            radius      segs
 1    none 0            0            0            .32          21
           0            0            87.5
 2    none 105.         163.         0            .42          21
           105.         163.         77.5
 3    none 210.         163.         0            .32          21
           210.         163.         87.5

Number of wires          =  3
          current nodes  =  63

                         minimum                  maximum
Individual wires      wire    value             wire  value
segment length         2      3.69048            1    4.16667
radius                 1      .32                2    .42



ELECTRICAL DESCRIPTION
Frequencies (KHz)
     frequency                 no. of  segment length (wavelengths)
 no. lowest       step          steps   minimum        maximum
 1   1,220.       0              1      .0102513       .0115741

Sources
source node    sector  magnitude      phase          type
 1      1       1      274.862        303.           voltage
 2      22      1      289.351        313.7          voltage
 3      43      1      57.6172        67.6           voltage

IMPEDANCE
normalization = 50.
freq     resist   react    imped    phase    VSWR    S11      S12
(KHz)    (ohms)   (ohms)   (ohms)   (deg)             dB       dB
source =  1; node 1, sector 1
1,220.   110.02   49.611   120.69   24.3     2.737   -6.6546  -1.0571
source =  2; node 22, sector 1
1,220.   27.654   -32.85   42.94    310.1    2.7821  -6.5359  -1.0904
source =  3; node 43, sector 1
1,220.   15.092   -7.8208  16.998   332.6    3.4021  -5.2614  -1.5351
```

Calculated Current Distribution

CURRENT rms
Frequency = 1220 KHz
Input power = 1,000. watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	1.61047	278.8	.245627	-1.59163
2	0	0	4.16667	1.65617	275.2	.150172	-1.64934
3	0	0	8.33333	1.67658	273.1	.0919968	-1.67406
4	0	0	12.5	1.6839	271.5	.044205	-1.68332
5	0	0	16.6667	1.67943	270.1	3.44E-03	-1.67943
6	0	0	20.8333	1.66367	268.9	-.0316717	-1.66337
7	0	0	25.	1.63691	267.8	-.0617752	-1.63574
8	0	0	29.1667	1.59936	266.9	-.0872256	-1.59698
9	0	0	33.3333	1.55121	266.	-.108234	-1.54743
10	0	0	37.5	1.49267	265.2	-.124942	-1.48743
11	0	0	41.6667	1.42398	264.5	-.13745	-1.41733
12	0	0	45.8333	1.34539	263.8	-.145837	-1.33747
13	0	0	50.	1.2572	263.1	-.150171	-1.24819
14	0	0	54.1667	1.15965	262.5	-.150513	-1.14984
15	0	0	58.3333	1.05304	262.	-.146915	-1.04274
16	0	0	62.5	.937584	261.4	-.139421	-.927159
17	0	0	66.6667	.813429	260.9	-.128051	-.803287
18	0	0	70.8333	.680524	260.5	-.112791	-.671112
19	0	0	75.	.538443	260.	-.0935405	-.530255
20	0	0	79.1667	.385817	259.5	-.0700054	-.379413
21	0	0	83.3333	.219493	259.1	-.0415102	-.215532
END	0	0	87.5	0	0	0	0
GND	-100.412	-30.699	0	4.76513	3.6	4.75574	.299023
23	-100.412	-30.699	3.69048	4.6561	2.6	4.65139	.209415
24	-100.412	-30.699	7.38095	4.56931	2.	4.56656	.158551
25	-100.412	-30.699	11.0714	4.4717	1.5	4.47017	.116664
26	-100.412	-30.699	14.7619	4.35994	1.1	4.35919	.0806801
27	-100.412	-30.699	18.4524	4.23269	.7	4.23241	.0492299
28	-100.412	-30.699	22.1429	4.08949	.3	4.08943	.0216739
29	-100.412	-30.699	25.8333	3.93027	360.	3.93027	-2.33E-03
30	-100.412	-30.699	29.5238	3.75515	359.6	3.75508	-.0230005
31	-100.412	-30.699	33.2143	3.56442	359.3	3.56419	-.040449
32	-100.412	-30.699	36.9048	3.35844	359.1	3.35799	-.0547617
33	-100.412	-30.699	40.5952	3.1376	358.8	3.1369	-.0659925
34	-100.412	-30.699	44.2857	2.90232	358.5	2.90138	-.0741786
35	-100.412	-30.699	47.9762	2.65304	358.3	2.65186	-.0793429
36	-100.412	-30.699	51.6667	2.3901	358.	2.38871	-.081499
37	-100.412	-30.699	55.3571	2.11372	357.8	2.11218	-.0806483
38	-100.412	-30.699	59.0476	1.82387	357.6	1.82226	-.076771
39	-100.412	-30.699	62.7381	1.52009	357.4	1.51849	-.069818
40	-100.412	-30.699	66.4286	1.20098	357.2	1.19949	-.0596751
41	-100.412	-30.699	70.119	.862773	356.9	.861542	-.0460695
42	-100.412	-30.699	73.8095	.499866	356.7	.499048	-.0285866
END	-100.412	-30.699	77.5	0	0	0	0
GND	-200.824	-61.3981	0	2.39706	95.	-.208575	2.38797
44	-200.824	-61.3981	4.16667	2.38022	94.5	-.186049	2.37294
45	-200.824	-61.3981	8.33333	2.35586	94.2	-.171231	2.34963
46	-200.824	-61.3981	12.5	2.32093	93.9	-.157916	2.31555
47	-200.824	-61.3981	16.6667	2.27516	93.7	-.14535	2.27052
48	-200.824	-61.3981	20.8333	2.21856	93.4	-.133244	2.21456
49	-200.824	-61.3981	25.	2.15128	93.2	-.121484	2.14785

50	-200.824	-61.3981	29.1667	2.07353	93.	-.110033	2.07061
51	-200.824	-61.3981	33.3333	1.98561	92.9	-.0988915	1.98314
52	-200.824	-61.3981	37.5	1.88783	92.7	-.0880812	1.88577
53	-200.824	-61.3981	41.6667	1.78057	92.5	-.077638	1.77887
54	-200.824	-61.3981	45.8333	1.66419	92.3	-.0676062	1.66282
55	-200.824	-61.3981	50.	1.53912	92.2	-.0580351	1.53803
56	-200.824	-61.3981	54.1667	1.40577	92.	-.0489756	1.40491
57	-200.824	-61.3981	58.3333	1.2645	91.8	-.0404792	1.26385
58	-200.824	-61.3981	62.5	1.11565	91.7	-.0325961	1.11517
59	-200.824	-61.3981	66.6667	.959437	91.5	-.0253742	.959102
60	-200.824	-61.3981	70.8333	.795866	91.4	-.0188569	.795643
61	-200.824	-61.3981	75.	.624506	91.2	-.0130818	.624369
62	-200.824	-61.3981	79.1667	.443868	91.	-8.08E-03	.443795
63	-200.824	-61.3981	83.3333	.25047	90.9	-3.85E-03	.250441
END	-200.824	-61.3981	87.5	0	0	0	0

CURRENT MOMENTS(amp-degrees) rms

Frequency = 1220 KHz
Input power = 1,000. watts

			vertical current moment	
wire	magnitude	phase (deg)	magnitude	phase (deg)
1	101.24	267.	101.24	267.
2	222.471	0.0	222.471	0.0
3	131.474	93.	131.474	93.

Medium wave array vertical current moment (amps-degrees) rms
(Calculation assumes tower wires are grouped together.
The first wire of each group must contain the source.)

tower	magnitude	phase (deg)
1	101.24	267.
2	222.471	0.0
3	131.474	93.

ITEM 5 - Sampling System Measurements

Measurements were made using a HP 8751A network analyzer, an ENI 403LA amplifier and custom manufactured directional couplers in a calibrated measurement system. The sample line was found to be resonant (an odd multiple of 90° which is an impedance zero - very low resistance and zero reactance) around 805 kHz which is 90° for this length of transmission line. The characteristic impedance was calculated using the following formula, where $R_1 \pm jX_1$ and $R_2 \pm X_2$ are the measured impedances at the -45° and +45° offset frequencies:

$$Z_0 = \sqrt{\sqrt{R_1^2 + X_1^2} \bullet \sqrt{R_2^2 + X_2^2}}$$

The measured open circuit sample line impedances and characteristic impedance calculations are shown below:

	Resonance Frequency (kHz)	-45° Offset Frequency (kHz)	-45° Offset Impedance ($R_1 \pm jX_1$) (Ohms)	+45° Offset Frequency (kHz)	+45° Offset Impedance ($R_2 \pm jX_2$) (Ohms)	Characteristic Impedance ($Z_\varnothing$)
Sample Line 1	806.80	403.40	0.4 - j 50.4	1210.20	3.5 + j 50.1	50.3 ohms
Sample Line 2	804.70	402.35	0.4 - j 51.0	1207.05	3.5 + j50.5	50.7 ohms
Sample Line 3	802.30	401.15	0.4 - j 50.9	1203.45	3.5 + j 50.7	50.9 ohms

The sample line lengths calculated from the measurements above are:

	Length in Electrical Degrees at 1220 kHz	Measured Impedance (Z_S) With TCT Attached
Sample Line 1	92.9°	46.5 - j 0.4 ohms
Sample Line 2	93.1°	47.2 - j 0.7 ohms
Sample Line 3	93.4°	47.2 - j 0.1 ohms

ITEM 6 - Reference Field Strength Measurements

117.5° Radial

Distance (km)	Time Date	Description	Coordinates NAD 27	Field Strength (mV/m)
1.15	1237 5 May 2010	End of Jasmine Valley Rd	34° 27' 26.3" 118° 22' 35.0"	35.0
1.53	1234 5 May 2010	End of Sun Rose Rd	34° 27' 23.4" 118° 22' 28.3"	28.3
2.23	1227 5 May 2010	0.7 mile east from Abelia on Tic Canyon Rd	34° 27' 24.6" 118° 22' 47.9"	24.6

146.0° Radial

Distance (km)	Time Date	Description	Coordinates NAD 27	Field Strength (mV/m)
1.85	1220 5 May 2010	14631 Geranium Court	34° 27' 06.3" 118° 23' 23.3"	23.3
1.94	1222 5 May 2010	14618 Rose Court	34° 27' 03.4" 118° 23' 22.1"	22.1
2.08	1225 5 May 2010	29942 Abelia	34° 26' 59.4" 118° 23' 19.4"	19.4

180.0° Radial

Distance (km)	Time Date	Description	Coordinates NAD 27	Field Strength (mV/m)
2.44	1251 5 May 2010	29629 Poppy Meadow Lane	34° 26' 36.7" 118° 24' 03.3"	12.4
3.19	12 48 5 May 2010	15230 Lotus Garden Dr	34° 26' 12.3" 118° 24' 04.9"	14.0
3.58	1242 5 May 2010	29004 Lilly Glen	34° 26' 56.6" 118° 24' 03.3"	10.5

208.5° Radial

Distance (km)	Time Date	Description	Coordinates NAD 27	Field Strength (mV/m)
4.47	1300 5 May 2010	Kenroy and Nearview	34° 25' 49.2" 118° 25' 29.6"	9.00
4.70	1304 5 May 2010	Goodvale and Lakeview	34° 25' 42.3" 118° 25' 32.9"	8.80
5.10	1306 5 May 2010	16706 Minten	34° 25' 29.7" 118° 25' 37.5"	6.20

343.0° Radial

Distance (km)	Time Date	Description	Coordinates NAD 27	Field Strength (mV/m)
9.54	1352 5 May 2010	Big Oaks Tavern Mail Box East Side of Road	33° 32' 50.9" 118° 25' 56.7"	6.30
9.61	1355 5 May 2010	Big Oaks Tavern NW Corner of Parking Lot	33° 32' 52.2" 118° 25' 56.9"	7.80
9.65	1400 5 May 2010	Turnout East Side of Road	33° 32' 57.6" 118° 25' 37.5"	5.80

ITEM 7 - Direct Measurement of Power

Common point impedance measurement were made using a HP 8751A network analyzer, an ENI 403LA amplifier and custom manufactured directional couplers in a calibrated measurement system. The measurements were made at the phasor cabinet input adjacent to the common point current meter that is used to determine operation power. The impedance measured at this point was adjusted to a value of 50 ± j0 for the directional antenna system.

ITEM 8 - Antenna Monitor and Sampling System

The sample system installed consists of Vector Technology, Inc model 600-203 toroidal current transformers (TCT) installed inside the tuning houses at the base of each tower. All three TCTs have recently calibrated by the factory. The TCTs are connected to a Gorman-Redlich CMR digital antenna monitor by equal lengths of 3/8 inch Andrew LDF2-50 coaxial cable. This cable has a foam dielectric, and solid copper inner and outer conductors. At the antenna monitor end of these cables there is a short (approximately 36") RG-8 jumper connecting the cable to the antenna monitor. These lines were verified to have equal electrical lengths. All excess cable is buried. The antenna monitor was tested with a signal generator, a Tee connector and equal lengths of cable. The two signals were fed into the reference sample inputs and the monitor was found to be in good working order. There is no change to the ground system, the description contained in the current station license (BA-19860325AA) remains accurate.