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CALIFORNIA
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PENNSYLVANIA
WASHINGTON DC
WISCONSIN

June 19, 2012

Federal Communications Commission
P.O. Box 979089
SL-MO-C2-GL
1005 Convention Plaza
St. Louis, MO 63101

Re: KPQ(AM), Wenatchee, WA, Facility No. 71715

Dear Sir or Madam:

On behalf of CCR-Wescoast IV, LLC, the licensee of KPQ(AM), Wenatchee, WA, enclosed are the original and two copies of an application for modification of KPQ's license. This application is submitted on FCC Form 302-AM.

Also enclosed is a $1,365.00 check, payable to the Commission, for payment of the $635.00 station licensee fee and the $735.00 AM directional antenna fee associated with this application, as well as an FCC Form 159.

Please address any questions concerning this application to me.

Sincerely,

Howard M. Liberman

Howard M. Liberman

DC01/ 2943977.1

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. BMML-20120620ACR

SECTION I - APPLICANT FEE INFORMATION

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

CCR-Wescoast IV, LLC

MAILING ADDRESS (Line 1) (Maximum 35 characters)
501 South Cherry Street, Suite 480

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
Denver	CO	80246

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
(303) 468-6500	KPQ	71715

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):

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
M M R	0 0 0 1	$ 635.00	

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
M O R	0 0 0 1	$ 730.00	

	TOTAL AMOUNT REMITTED WITH THIS APPLICATION	FOR FCC USE ONLY
ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.	$ 1,365.00	

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT CCR-Wescoast IV, LLC		
MAILING ADDRESS 501 Cherry Street, Suite 480		
CITY Denver	STATE CO	ZIP CODE 80246

2. This application is for:

☑ Commercial ☐ Noncommercial

☑ AM Directional Nighttime ☑ AM Non-Directional Daytime

Call letters	Community of License	Construction Permit File No.	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit
KPQ	Wenatchee, WA	N/A	N/A	N/A

BZ-19851219AI

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. N/A

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. N/A

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. N/A

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	
Joseph Schwartz	Joseph L Schwartz	
Title	Date	Telephone Number
CEO of the Manager	6/18/12	(303)468-6500

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
CCR - WESCOAST IV, LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☑ 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
KPQ	N/A	560	Unlimited	5	5

2. Station location	
State	City or Town
Washington	Wenatchee

3. Transmitter location			
State	County	City or Town	Street address (or other identification)
WA	Chelan	Wenatchee	Miller & Hawley Street East

4. Main studio location			
State	County	City or Town	Street address (or other identification)
WA	Chelan	Wenatchee	231 N. Wenatchee Avenue

5. Remote control point location (specify only if authorized directional antenna)			
State	County	City or Town	Street address (or other identification)
WA	Chelan	Wenatchee	231 N. Wenatchee Avenue

6. Has type-approved stereo generating equipment been installed? ☐ Yes ☑ No

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

Attach as an Exhibit a detailed description of the sampling system as installed. Exhibit No. See Engineering

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	17.15
Measured antenna or common point resistance (in ohms) at operating frequency	**Measured antenna or common point reactance (in ohms) at operating frequency**
Night: 50.0 Day: 17.0	Night: J0 Day: -J90

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 (N)	-116.9	---	0.951	---	---	---
#2 (S)	0	---	1.000	---	---	---

Manufacturer and type of antenna monitor: Potomac 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	91.4 m	94.2 m	95.1 m	Exhibit No. N/A

Excitation ☑ 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	47 °	27 '	12 "	West Longitude	120 °	19 '	43 "

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. N/A

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

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

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

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)
Clarence M. Beverage	
Address (include ZIP Code) Communications Technologies, Inc. P. O. Box 1130 Marlton, NJ 08053	Date 06/05/2012
	Telephone No. (Include Area Code) 856-985-0077

☐ Technical Director ☐ Registered Professional Engineer

☐ Chief Operator ☐ Technical Consultant

☑ Other (specify) Broadcast Engineering Consultant

ENGINEERING STATEMENT IN

SUPPORT OF 302-AM

APPLICATION FOR LICENSE EMPLOYING MOMENT

METHOD MODELING

KPQ-AM 560 kHz

5 kW DA-N U

WENATCHEE, WASHINGTON

JUNE 2012

ENGINEERING STATEMENT IN
SUPPORT OF 302-AM
APPLICATON FOR LICENSE
EMPLOYING MOMENT METHOD MODELING
KPQ-AM 560 kHz
5 kW DA-N U
WENATCHEE, WASHINGTON

JUNE 2012

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ENGINEERING STATEMENT IN
SUPPORT OF 302-AM
APPLICATON FOR LICENSE
EMPLOYING MOMENT METHOD MODELING
KPQ-AM 560 kHz
5 kW DA-N U
WENATCHEE, WASHINGTON

JUNE 2012

SUMMARY

The following engineering statement has been prepared on behalf of **CCR – Wescoast IV, LLC**, licensee of standard broadcast station KPQ-AM, FCC ID 71715, 560 kHz, Wenatchee, Washington. KPQ-AM is currently licensed under BZ-19851219AI which authorizes 560 kHz daytime non directional operation at a power of 5 kW and 5 kW nighttime directional operation. This application requests licensing of the KPQ-AM antenna system using computer modeling and sample system verification as provided for in the Second Report and Order in MM Docket No. 93-177 released September 26, 2008. The rules specify that the night directional antenna parameters be set to the operating parameters determined by the moment method without deviation. That operation has been completed and Form 302-AM is submitted herein specifying the as adjusted operating parameters.

METHOD OF MOMENTS MODEL – SELF IMPEDANCE ANALYSIS

In an effort to model the antenna system as accurately as possible, detailed mechanical data was obtained from the licensee and is summarized below:

Each tower is 300' (91.4 meters) in height, steel, uniform cross section, 38" face mounted on a square concrete base pier with 4" strap in an X configuration.

Base Insulators are brown ceramic 18" in height; specified capacitance of 30 pf.

Austin ring lighting transformer are employed at each tower and a single static drain choke.

None of the towers support an antenna or transmission line.

Tower #1 (N) is 47" from feed through bowl with a no lightning dissipation choke. Tower #2 (S) is 52" from the feed through bowl with no lightning dissipation choke.

The choice of calculating engine and software implementation chosen for this filing is the ACS Model Version 1.018 employing MININEC3. The circuit analysis software employed is WCAP Professional Version 1.1.02.

The wire models for the two towers are constructed as specified below:

Tower #1 North
Actual radius = 0.4608 meters
Model radius = 0.6 meters
Percentage of actual radius = 130.2%
Z = 93.17 meters
Percentage of actual height = 101.9%
Number of segments = 20

Tower #2 South
Actual radius = 0.4608 meters
Model radius = 0.6 meters
Percentage of actual radius = 130.2%
Z = 95.11 meters
Percentage of actual height = 104.1%
Number of segments = 20

The values above comply with the 73.151 requirement that the radius of the wire model cylinder be within 80 and 150 percent of the radius of a circle with a circumference equal to the sum of the faces, that the height be between 75 and 125 percent of the physical length and that no segment be less than 10 electrical degrees.

The tower measured base self impedances, with all other towers floating, as measured at the J plug, are listed below. Tower impedance was obtained using a Delta OIB-3, serial number 1369 fed by the transmitter. The modeled self impedance measurements, with all other towers floating, may be found in *Exhibit I, page 2* for Tower #1 and *Exhibit I, page 5* for Tower #2. A circuit model has been constructed for each tower to account for shunt and series reactance across the tower base. All calculations have been

made employing WCAP Professional version 1.1.02 as seen in *Figures 1 and 2* for self impedance and *Figures 3 and 4* for nighttime directional operation. The measured and calculated self impedance values are well within the tolerance specified in 73.151(c)(2)(ii) as seen below:

Tower #1

Measured self impedance at ATU:	13.0 -J 85
Modeled self impedance at base:	13.916 -J 113.146
Shunt capacitance:	30 pf
Series inductance:	+J 27.55, 7.83 uh
Shunt reactance:	+J 10,000, 2,842 uh
Modeled self impedance at ATU:	13.82 -J 85

Tower #2

Measured self impedance at ATU:	15 –J 87
Modeled self impedance at base:	14.744 -J 106.62
Shunt capacitance:	30 pf
Series inductance:	+J 19.18, 5.45 uh
Shunt reactance:	+J 10,000, 2,842 uh
Modeled self impedance at ATU:	14.67 -J 87

The calculated tolerances are:

Tower #1 13 ± 2.52 resistance, -J 85 ± 5.40 reactance
Tower #2 15 ± 2.6 resistance, -J 87 ± 5.48 reactance

METHOD OF MOMENTS MODEL – BASE OPERATING PARAMETERS

The modeled tower array was employed, as constructed for the derivation of self impedance, for the determination of nighttime operating parameters. The FCC theoretical values were converted to base excitation values. The base excitation values for the nighttime array may be found in *Exhibit II, page 2* and the base operating parameters on *page 3*.

The calculated base operating parameters and the phase monitor parameters as adjusted and reflected on Form 302-AM, attached, are as follows:

NIGHTTIME:

Tower	Figures 4 – 6 Circuit Model Ratio and Phase		Correction to Modeled Values to Derive Antenna Monitor Values	
#1	1.003	-0.006	1.000	-0.004
#2	1.003	-0.002	1.000	0.000

Tower	MoM Modeled Current & Phase		Antenna Monitor Current & Phase	
#1	0.951	-116.9	0.951	-116.9
#2	1.000	0.00	1.000	0.00

The adjusted pattern has phase monitor values which are equal to the modeled phase and ratio corrected for circuit model amplitude and phase. The nighttime directional pattern has been adjusted to the values above and as shown on the attached form 302-AM.

DIRECT MEASUREMENT OF POWER

Common point impedance was measured with a Delta OIB-3, serial number 1369, placed at the Delta TCA-20 EXR common point ammeter. Common point current was measured with a Delta TCA-20 EXR permanently installed in the phasing cabinet with the toroidal sample immediately adjacent to the impedance bridge. Common point resistance was set to 50 +J0 and the transmitter power adjusted to yield the correct current of 10.4 amps for a power level of 5,400 watts as found on FCC Form 302-AM attached.

Tower #2 non-directional impedance, was taken at the J plug where a thermocouple ammeter, 0-20 amps, is inserted for non directional mode power measurement.

POST CONSTRUCTION CERTIFICATION OF ARRAY GEOMETRY

The array has been modeled using the best available data.

	ASR	Height Above Base Insulator	Height Overall AGL
Tower #1	1033940	91.4 meters	95.1
Tower #2	1033941	91.4 meters	95.1

As an existing licensed facility a surveyor's certification is not included as provided for in Public Notice FCC DA 09-2430 dated October 29, 2009.

SAMPLING SYSTEM

The antenna system is licensed with an approved sampling system and no changes to the sampling system were required for this filing.

Delta toroid sampling devices, type TCT-3, are mounted on open panels in weather proof buildings at the base of each tower. Sample lines are equal length Andrew FSJ1-50. The antenna monitor is a Potomac Instruments AM-1901.

Measurements on the sampling system components are tabulated below. Toroidal sample devices were tested for accuracy by removing the units from the tuning units at the base of each tower and placing the devices in series on the same conductor in the transmitter building. The sample devices were then measured when connected to the phase monitor with coax jumpers having exact equal electrical length:

		Ratio	Phase
Toroid #1	#691	100.0	0.0
Toroid #2	#690	100.0	0.0

The sampling device accuracy was verified as being well within the manufacturer tolerance of ±2% in magnitude and ±3 degrees in phase

Phase monitor accuracy was confirmed by feeding two tower inputs at a time through a splitter and equal length jumpers to confirm equal magnitude and phase on each tower. There were no observable errors.

Impedance and electrical length for each of the three sample lines were measured with an Array Solutions model AIM4170C vector network analyzer ("VNA"). The VNA was connected to the sample lines at the transmitter building with the sample lines unterminated on the turning unit end. The measured electrical length data is found below:

Sample line open-circuited odd quarter wave below 560 kHz (0.25 wavelength)	1 (N) = 216 kHz 1,138.9' = 233.3 deg. 2 (S) = 216 kHz 1,138.9' = 233.3 deg.
Sample line open-circuited odd quarter wave above 560 kHz (0.75 wavelength)	1 (N) = 659 kHz 1,119.9' = 229.4 deg. 2 (S) = 659 kHz 1,119.9' = 229.4 deg.

It may be seen that the sample lines are equal in length. The sample system meets the rule requirement that the sample lines be equal to within one degree.

The impedance of the sample lines was determined by measuring the open circuit impedance 45 degrees above and below the resonant length of the sample lines. The measured data is presented below. The impedance is determined using the formula:

$$Z_o = ((R_1^2 + X_1^2)^{1/2} \times (R_2^2 + X_2^2)^{1/2})^{1/2}$$

	3/8 lambda +45° From 3/4 wave	Measured Impedance	1/8 lambda -45° From 3/4 wave	Measured Impedance	Calculated Impedance by formula
Tower #1(N)	769	17.009 + J 47.497	549	11.360 –J 48.013	49.89
Tower #2(S)	769	16.956 +J 47.061	549	11.233 – J 48.147	49.70

The characteristic impedance of the transmission lines is within 1 ohm. The allowable tolerance is 2 ohms.

Sampling system impedance was measured with each of the sampling lines terminated in its respective toroid sampling device. Impedance was measured by connecting each sample line directly to the VNA. The measured impedance data is found below as measured at 560 kHz.

Measured impedance of sampling line and associated toroid

Tower #1(N)	54.82 –J1.95
Tower #2(S)	52.52 –J 2.91

GROUND SYSTEM

The ground system consists of 90 radials, equally spaced, 137.2 meters in length plus 10 radials 122 meters in length equally spaced at tower #1 North. At tower #2 South the ground system consists of 90 radials, equally spaced, 122 meters in length plus 30 equally spaced radials 106.7 meters in length.

REFERENCE FIELD STRENGTH MEASUREMENTS

Reference field strength measurements were taken by Kenneth Eklund, Director of Engineering for Cherry Creek Radio. The measurement data appears in *Appendix 1*. The field meter was checked against other meters of known calibration prior to the commencement of measurements.

CONCLUSION

All adjustments, measurements and field work were undertaken under the direction of the affiant.

The foregoing was prepared on behalf of **CCR - Wescoast IV, LLC** by Clarence M. Beverage of *Communications Technologies, Inc.*, Marlton, New Jersey, whose qualifications are a matter of record with the Federal Communications Commission. The statements herein are true and correct of his own knowledge, except such statements made on information and belief, and as to these statements he believes them to be true and correct.

/s/ Clarence M. Beverage
for Communications Technologies, Inc.
Marlton, New Jersey

June 5, 2012

EXHIBIT I

KPQ TOWER #1 FED TOWER #2 FLOATING

```
****************************************
                ACSModel
          (MININEC 3.1 Core)
     05-10-2012          19:57:46
****************************************
```

KPQ TOWER #1

Frequency = 0.560 MHz Wavelength = 535.35714 Meters

No. of Wires: 2

Wire No. 1 Coordinates X	Y	Z	Radius	End Connection	No. of Segments
0	0	0		-1	
0	0	93.16702	0.6	0	20

Wire No. 2 Coordinates X	Y	Z	Radius	End Connection	No. of Segments
-114.7227	68.93233	0		-2	
-114.7227	68.93233	95.11512	0.6	0	20

**** ANTENNA GEOMETRY ****

Wire No. 1 Coordinates X	Y	Z	Radius	Connection End1	End2	Pulse No.
0	0	0	0.6	-1	1	1
0	0	4.658351	0.6	1	1	2
0	0	9.316702	0.6	1	1	3
0	0	13.97505	0.6	1	1	4
0	0	18.6334	0.6	1	1	5
0	0	23.29175	0.6	1	1	6
0	0	27.9501	0.6	1	1	7
0	0	32.60846	0.6	1	1	8
0	0	37.26681	0.6	1	1	9
0	0	41.92516	0.6	1	1	10
0	0	46.58351	0.6	1	1	11
0	0	51.24186	0.6	1	1	12
0	0	55.90021	0.6	1	1	13
0	0	60.55856	0.6	1	1	14
0	0	65.21691	0.6	1	1	15
0	0	69.87526	0.6	1	1	16
0	0	74.53362	0.6	1	1	17
0	0	79.19196	0.6	1	1	18
0	0	83.85031	0.6	1	1	19
0	0	88.50867	0.6	1	0	20

EXHIBIT I

KPQ TOWER #1 FED TOWER #2 FLOATING

Wire No. 2 Coordinates				Connection		Pulse
X	Y	Z	Radius	End1	End2	No.
-114.7227	68.93233	0	0.6	-2	2	21
-114.7227	68.93233	4.755756	0.6	2	2	22
-114.7227	68.93233	9.511512	0.6	2	2	23
-114.7227	68.93233	14.26727	0.6	2	2	24
-114.7227	68.93233	19.02302	0.6	2	2	25
-114.7227	68.93233	23.77878	0.6	2	2	26
-114.7227	68.93233	28.53454	0.6	2	2	27
-114.7227	68.93233	33.29029	0.6	2	2	28
-114.7227	68.93233	38.04605	0.6	2	2	29
-114.7227	68.93233	42.8018	0.6	2	2	30
-114.7227	68.93233	47.55756	0.6	2	2	31
-114.7227	68.93233	52.31332	0.6	2	2	32
-114.7227	68.93233	57.06907	0.6	2	2	33
-114.7227	68.93233	61.82483	0.6	2	2	34
-114.7227	68.93233	66.58058	0.6	2	2	35
-114.7227	68.93233	71.33634	0.6	2	2	36
-114.7227	68.93233	76.09209	0.6	2	2	37
-114.7227	68.93233	80.84785	0.6	2	2	38
-114.7227	68.93233	85.60361	0.6	2	2	39
-114.7227	68.93233	90.35936	0.6	2	0	40

```
Sources:  1
Pulse No., Voltage Magnitude, Phase (Degrees): 1, 1000.0, 0.0

Number of Loads:  1
Pulse No., Resistance, Reactance:  21 , 0 ,-10000

********************    SOURCE DATA     ********************
Pulse  1      Voltage = (1000.0, 0.0j)
              Current = (1.0708, 8.7064j)
              Impedance = (13.916, -113.146j)
              Power = 535.42 Watts
```

EXHIBIT I

KPQ TOWER #1 FED TOWER #2 FLOATING

Page 3

********** CURRENT DATA **********

Wire No. 1 :

Pulse No.	Real (Amps)	Imaginary (Amps)	Magnitude (Amps)	Phase (Degrees)
1	1.0708	8.7064	8.772	82.9882
2	1.0682	8.191	8.2603	82.57
3	1.0602	7.8643	7.9355	82.322
4	1.047	7.548	7.6203	82.1029
5	1.0285	7.2295	7.3023	81.9034
6	1.0047	6.9019	6.9747	81.7174
7	0.9758	6.5622	6.6344	81.5419
8	0.9418	6.2088	6.2798	81.3748
9	0.9026	5.8408	5.9101	81.2149
10	0.8585	5.458	5.5251	81.0611
11	0.8094	5.0603	5.1246	80.9126
12	0.7554	4.6477	4.7087	80.7687
13	0.6965	4.2203	4.2774	80.6289
14	0.6327	3.7782	3.8308	80.4927
15	0.5641	3.3211	3.3687	80.3596
16	0.4906	2.8487	2.8906	80.2292
17	0.4118	2.3596	2.3952	80.1011
18	0.3273	1.8514	1.8801	79.9748
19	0.236	1.3182	1.3392	79.8493
20	0.1358	0.7489	0.7612	79.7213
E	0.0	0.0	0.0	0.0

Wire No. 2 :

Pulse No.	Real (Amps)	Imaginary (Amps)	Magnitude (Amps)	Phase (Degrees)
21	0.006	-0.0067	0.009	-48.2613
22	0.0359	-0.0402	0.0539	-48.2052
23	0.0519	-0.0579	0.0777	-48.1068
24	0.0646	-0.0717	0.0965	-47.9854
25	0.0748	-0.0826	0.1114	-47.8453
26	0.0829	-0.0911	0.1232	-47.6891
27	0.0892	-0.0974	0.1321	-47.5184
28	0.0937	-0.1017	0.1383	-47.3347
29	0.0966	-0.1041	0.142	-47.1389
30	0.0979	-0.1047	0.1433	-46.9321
31	0.0976	-0.1036	0.1423	-46.7153
32	0.0957	-0.1008	0.139	-46.4893
33	0.0922	-0.0964	0.1334	-46.2551
34	0.0873	-0.0904	0.1257	-46.0135
35	0.0807	-0.0829	0.1157	-45.7654
36	0.0726	-0.0739	0.1036	-45.5116
37	0.0629	-0.0635	0.0894	-45.2528
38	0.0515	-0.0515	0.0728	-44.9894
39	0.0382	-0.0378	0.0537	-44.7212
40	0.0225	-0.0221	0.0316	-44.4419
E	0.0	0.0	0.0	0.0

KPQ TOWER #2 FED TOWER #1 FLOATING

```
****************************************
                ACSModel
          (MININEC 3.1 Core)
     05-10-2012          20:08:38
****************************************
```

KPQ Tower #2

Frequency = 0.560 MHz Wavelength = 535.35714 Meters

No. of Wires: 2

Wire No. 1 Coordinates X	Y	Z	Radius	End Connection	No. of Segments
0	0	0		-1	
0	0	93.16702	0.6	0	20

Wire No. 2 Coordinates X	Y	Z	Radius	End Connection	No. of Segments
-114.7227	68.93233	0		-2	
-114.7227	68.93233	95.11512	0.6	0	20

**** ANTENNA GEOMETRY ****

Wire No. 1 Coordinates X	Y	Z	Radius	Connection End1	End2	Pulse No.
0	0	0	0.6	-1	1	1
0	0	4.658351	0.6	1	1	2
0	0	9.316702	0.6	1	1	3
0	0	13.97505	0.6	1	1	4
0	0	18.6334	0.6	1	1	5
0	0	23.29175	0.6	1	1	6
0	0	27.9501	0.6	1	1	7
0	0	32.60846	0.6	1	1	8
0	0	37.26681	0.6	1	1	9
0	0	41.92516	0.6	1	1	10
0	0	46.58351	0.6	1	1	11
0	0	51.24186	0.6	1	1	12
0	0	55.90021	0.6	1	1	13
0	0	60.55856	0.6	1	1	14
0	0	65.21691	0.6	1	1	15
0	0	69.87526	0.6	1	1	16
0	0	74.53362	0.6	1	1	17
0	0	79.19196	0.6	1	1	18
0	0	83.85031	0.6	1	1	19
0	0	88.50867	0.6	1	0	20

KPQ TOWER #2 FED TOWER #1 FLOATING

Wire No. 2 Coordinates				Connection		Pulse
X	Y	Z	Radius	End1	End2	No.
-114.7227	68.93233	0	0.6	-2	2	21
-114.7227	68.93233	4.755756	0.6	2	2	22
-114.7227	68.93233	9.511512	0.6	2	2	23
-114.7227	68.93233	14.26727	0.6	2	2	24
-114.7227	68.93233	19.02302	0.6	2	2	25
-114.7227	68.93233	23.77878	0.6	2	2	26
-114.7227	68.93233	28.53454	0.6	2	2	27
-114.7227	68.93233	33.29029	0.6	2	2	28
-114.7227	68.93233	38.04605	0.6	2	2	29
-114.7227	68.93233	42.8018	0.6	2	2	30
-114.7227	68.93233	47.55756	0.6	2	2	31
-114.7227	68.93233	52.31332	0.6	2	2	32
-114.7227	68.93233	57.06907	0.6	2	2	33
-114.7227	68.93233	61.82483	0.6	2	2	34
-114.7227	68.93233	66.58058	0.6	2	2	35
-114.7227	68.93233	71.33634	0.6	2	2	36
-114.7227	68.93233	76.09209	0.6	2	2	37
-114.7227	68.93233	80.84785	0.6	2	2	38
-114.7227	68.93233	85.60361	0.6	2	2	39
-114.7227	68.93233	90.35936	0.6	2	0	40

```
Sources:  1
Pulse No., Voltage Magnitude, Phase (Degrees): 1, 2803.2, -80.4

Number of Loads:  1
Pulse No., Resistance, Reactance:  1 , 0 ,-10000

********************    SOURCE DATA     ********************
Pulse  21     Voltage = (469.4222, -2763.5891j)
              Current = (26.0311, 0.8031j)
              Impedance = (14.744, -106.62j)
              Power = 5000.13 Watts

Total Power = 5000.000 Watts
```

KPQ TOWER #2 FED TOWER #1 FLOATING

********** CURRENT DATA **********

Wire No. 1 :

Pulse No.	Real (Amps)	Imaginary (Amps)	Magnitude (Amps)	Phase (Degrees)
1	0.0029	0.005	0.0057	60.0123
2	-0.0819	-0.0987	0.1283	-129.7117
3	-0.1265	-0.1536	0.199	-129.4608
4	-0.1614	-0.1974	0.255	-129.2787
5	-0.1891	-0.2326	0.2998	-129.1069
6	-0.2108	-0.2609	0.3354	-128.9324
7	-0.227	-0.2828	0.3627	-128.751
8	-0.2383	-0.2989	0.3823	-128.5611
9	-0.2449	-0.3094	0.3946	-128.3623
10	-0.247	-0.3145	0.3999	-128.1549
11	-0.2449	-0.3142	0.3984	-127.939
12	-0.2387	-0.3087	0.3903	-127.7152
13	-0.2286	-0.2981	0.3757	-127.484
14	-0.2147	-0.2823	0.3547	-127.2461
15	-0.197	-0.2615	0.3274	-127.0021
16	-0.1758	-0.2354	0.2938	-126.7526
17	-0.151	-0.204	0.2538	-126.4981
18	-0.1225	-0.1671	0.2072	-126.239
19	-0.09	-0.1239	0.1531	-125.9748
20	-0.0526	-0.0733	0.0902	-125.6991
E	0.0	0.0	0.0	0.0

Wire No. 2 :

Pulse No.	Real (Amps)	Imaginary (Amps)	Magnitude (Amps)	Phase (Degrees)
21	26.0311	0.8031	26.0434	1.767
22	24.5889	0.5671	24.5954	1.3212
23	23.6592	0.4362	23.6632	1.0563
24	22.7499	0.3268	22.7523	0.8229
25	21.8256	0.2327	21.8269	0.6107
26	20.8674	0.1505	20.868	0.4133
27	19.8669	0.0788	19.8671	0.2272
28	18.8199	0.0166	18.8199	0.0504
29	17.7245	-0.0367	17.7245	-0.1186
30	16.58	-0.0813	16.5802	-0.281
31	15.3863	-0.1175	15.3868	-0.4377
32	14.1439	-0.1455	14.1447	-0.5892
33	12.8533	-0.1652	12.8544	-0.7364
34	11.5147	-0.1768	11.5161	-0.8796
35	10.1279	-0.1802	10.1295	-1.0194
36	8.6916	-0.1754	8.6933	-1.1563
37	7.2023	-0.1623	7.2041	-1.2906
38	5.6526	-0.1404	5.6543	-1.4231
39	4.0249	-0.1092	4.0264	-1.5545
40	2.2851	-0.0674	2.2861	-1.6884
E	0.0	0.0	0.0	0.0

EXHIBIT II

KPQ NIGHT DA ARRAY

****
ACSModel
(MININEC 3.1 Core)
05-10-2012 20:16:52
****

KPQ
NIGHT ARRAY MoM
PROP. PARAMETERS

Frequency = 0.560 MHz Wavelength = 535.35714 Meters

No. of Wires: 2

Wire No. 1 Coordinates X	Y	Z	Radius	End Connection	No. of Segments
0	0	0		-1	
0	0	93.16702	0.6	0	20

Wire No. 2 Coordinates X	Y	Z	Radius	End Connection	No. of Segments
-114.7227	68.93233	0		-2	
-114.7227	68.93233	95.11512	0.6	0	20

**** ANTENNA GEOMETRY ****

Wire No. 1 Coordinates X	Y	Z	Radius	Connection End1	End2	Pulse No.
0	0	0	0.6	-1	1	1
0	0	4.658351	0.6	1	1	2
0	0	9.316702	0.6	1	1	3
0	0	13.97505	0.6	1	1	4
0	0	18.6334	0.6	1	1	5
0	0	23.29175	0.6	1	1	6
0	0	27.9501	0.6	1	1	7
0	0	32.60846	0.6	1	1	8
0	0	37.26681	0.6	1	1	9
0	0	41.92516	0.6	1	1	10
0	0	46.58351	0.6	1	1	11
0	0	51.24186	0.6	1	1	12
0	0	55.90021	0.6	1	1	13
0	0	60.55856	0.6	1	1	14
0	0	65.21691	0.6	1	1	15
0	0	69.87526	0.6	1	1	16
0	0	74.53362	0.6	1	1	17
0	0	79.19196	0.6	1	1	18
0	0	83.85031	0.6	1	1	19
0	0	88.50867	0.6	1	0	20

EXHIBIT II

KPQ NIGHT DA ARRAY

Page 2

Wire No. 2 Coordinates				Connection		Pulse
X	Y	Z	Radius	End1	End2	No.
-114.7227	68.93233	0	0.6	-2	2	21
-114.7227	68.93233	4.755756	0.6	2	2	22
-114.7227	68.93233	9.511512	0.6	2	2	23
-114.7227	68.93233	14.26727	0.6	2	2	24
-114.7227	68.93233	19.02302	0.6	2	2	25
-114.7227	68.93233	23.77878	0.6	2	2	26
-114.7227	68.93233	28.53454	0.6	2	2	27
-114.7227	68.93233	33.29029	0.6	2	2	28
-114.7227	68.93233	38.04605	0.6	2	2	29
-114.7227	68.93233	42.8018	0.6	2	2	30
-114.7227	68.93233	47.55756	0.6	2	2	31
-114.7227	68.93233	52.31332	0.6	2	2	32
-114.7227	68.93233	57.06907	0.6	2	2	33
-114.7227	68.93233	61.82483	0.6	2	2	34
-114.7227	68.93233	66.58058	0.6	2	2	35
-114.7227	68.93233	71.33634	0.6	2	2	36
-114.7227	68.93233	76.09209	0.6	2	2	37
-114.7227	68.93233	80.84785	0.6	2	2	38
-114.7227	68.93233	85.60361	0.6	2	2	39
-114.7227	68.93233	90.35936	0.6	2	0	40

Sources: 2
Pulse No., Voltage Magnitude, Phase (Degrees): 1, 2176.8, 163.0
Pulse No., Voltage Magnitude, Phase (Degrees): 21, 2433.3, -86.4

Number of Loads: 0

```
********************    SOURCE DATA     ********************
Pulse  1      Voltage = (-2081.3945, 637.4816j)
              Current = (-9.2625, -18.795j)
              Impedance = (16.621, -102.551j)
              Power = 3648.73 Watts

Pulse  21     Voltage = (150.7679, -2428.6548j)
              Current = (22.0285, 0.2547j)
              Impedance = (5.569, -110.315j)
              Power = 1351.27 Watts

Total Power = 5000.000 Watts
```

EXHIBIT II
KPQ NIGHT DA ARRAY
Page 3

********** CURRENT DATA **********

Wire No. 1 :

Pulse No.	Real (Amps)	Imaginary (Amps)	Magnitude (Amps)	Phase (Degrees)
1	-9.2625	-18.795	20.9535	-116.2349
2	-8.9246	-17.7205	19.841	-116.7311
3	-8.6882	-17.0356	19.1232	-117.0218
4	-8.4399	-16.3689	18.4166	-117.2759
5	-8.1716	-15.6942	17.6942	-117.5048
6	-7.8791	-14.9974	16.9412	-117.7159
7	-7.5608	-14.272	16.151	-117.9129
8	-7.2157	-13.5149	15.3205	-118.0982
9	-6.8437	-12.7243	14.448	-118.2735
10	-6.4449	-11.8997	13.5329	-118.4401
11	-6.0194	-11.0409	12.5752	-118.599
12	-5.5677	-10.1481	11.5751	-118.751
13	-5.0898	-9.2214	10.5329	-118.8969
14	-4.5862	-8.261	9.4486	-119.0372
15	-4.0565	-7.2665	8.3221	-119.1726
16	-3.5004	-6.2368	7.152	-119.3036
17	-2.9164	-5.1693	5.9352	-119.4306
18	-2.3013	-4.0585	4.6655	-119.5545
19	-1.6477	-2.8915	3.328	-119.676
20	-0.9414	-1.6438	1.8943	-119.7984
E	0.0	0.0	0.0	0.0

Wire No. 2 :

Pulse No.	Real (Amps)	Imaginary (Amps)	Magnitude (Amps)	Phase (Degrees)
21	22.0285	0.2547	22.03	0.6625
22	20.7631	0.1788	20.7639	0.4934
23	19.9523	0.1363	19.9527	0.3914
24	19.1634	0.1004	19.1636	0.3003
25	18.3654	0.0692	18.3655	0.2159
26	17.5416	0.0416	17.5417	0.136
27	16.6848	0.0172	16.6848	0.0591
28	15.791	-0.0042	15.791	-0.0154
29	14.8588	-0.0229	14.8588	-0.0883
30	13.8873	-0.0387	13.8874	-0.1598
31	12.8766	-0.0518	12.8767	-0.2304
32	11.8271	-0.062	11.8273	-0.3003
33	10.7392	-0.0693	10.7394	-0.3697
34	9.613	-0.0736	9.6133	-0.4387
35	8.4485	-0.0749	8.4488	-0.5077
36	7.2446	-0.0729	7.245	-0.5766
37	5.9986	-0.0676	5.999	-0.6457
38	4.7042	-0.0587	4.7046	-0.7153
39	3.347	-0.0459	3.3473	-0.7856
40	1.8986	-0.0285	1.8989	-0.8586
E	0.0	0.0	0.0	0.0

********** BASE OPERATING PARAMETERS **********

Twr.	Ratio	Phase
1	0.951	-116.9
2	1.000	0.0

FIGURE 1

TOWER #1 BASE CIRCUIT MODEL

WCAP - KPQ TOWER #1

WCAP OUTPUT AT FREQUENCY: 0.560 MHz

NODE VOLTAGES

Node:	1	1136.1040 ∠ -82.9930° V
Node:	2	860.9391 ∠ -80.7618° V
Node:	3	860.9407 ∠ -80.7612° V

	WCAP PART	CURRENT IN	CURRENT OUT

	WCAP PART	BRANCH VOLTAGE	BRANCH CURRENT
R	3→2 0.00100000	0.01 ∠ 0.000° V	10.00 ∠ 0.000° A
R	1→0 13.91600000	1136.10 ∠ -82.993° V	9.97 ∠ -0.005° A
C	1→0 0.00003000	1136.10 ∠ -82.993° V	0.12 ∠ 7.007° A
L	2→0 2842.00000000	860.94 ∠ -80.762° V	0.09 ∠ -170.762° A
L	2→1 7.83000000	277.85 ∠ 90.079° V	10.08 ∠ 0.079° A

	WCAP PART	FROM IMPEDANCE	TO IMPEDANCE
R	3→2 0.00100000	13.82 - j 84.977	13.82 - j 84.977
R	1→0 13.91600000	13.92 - j 113.146	0.00 + j 0.000
C	1→0 0.00003000	0.00 - j 9473.509	0.00 + j 0.000
L	2→0 2842.00000000	0.00 + j 9999.815	0.00 + j 0.000
L	2→1 7.83000000	13.59 - j 84.280	13.59 - j 111.830

WCAP PART VSWR

WCAP INPUT DATA:

0.5600 0.00000000 0

I	10.00000000	0	3	0.00000000
R	0.00100000	3	2	0.00000000
R	13.91600000	1	0	-113.14600000
C	0.00003000	1	0	
L	2842.00000000	2	0	0.00000000
L	7.83000000	2	1	0.00000000

Center Frequency: 0.56 MHz

Frequency Range: 0 kHz

Frequency Step: 0 kHz

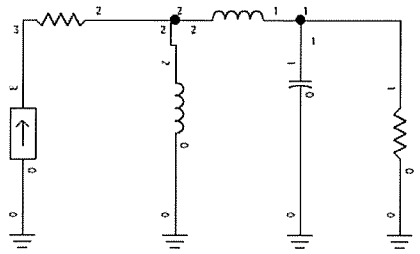


FIGURE 2

TOWER #2 BASE CIRCUIT MODEL

WCAP - KPQ TOWER #2

WCAP OUTPUT AT FREQUENCY: 0.560 MHz

NODE VOLTAGES
Node: 1 1073.6281 ∠ -82.1316° V
Node: 2 882.3685 ∠ -80.4300° V
Node: 3 882.3702 ∠ -80.4293° V

WCAP PART		CURRENT IN	CURRENT OUT

	WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	3→2	0.00100000	0.01 ∠ 0.000° V	10.00 ∠ 0.000° A
R	1→0	14.74400000	1073.63 ∠ -82.132° V	9.97 ∠ -0.005° A
C	1→0	0.00003000	1073.63 ∠ -82.132° V	0.11 ∠ 7.868° A
L	2→0	2842.00000000	882.37 ∠ -80.430° V	0.09 ∠ -170.430° A
L	2→1	5.45000000	193.43 ∠ 90.083° V	10.09 ∠ 0.083° A

	WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	3→2	0.00100000	14.67 - j 87.009	14.67 - j 87.009
R	1→0	14.74400000	14.74 - j 106.620	0.00 + j 0.000
C	1→0	0.00003000	0.00 - j 9473.509	0.00 + j 0.000
L	2→0	2842.00000000	0.00 + j 9999.815	0.00 + j 0.000
L	2→1	5.45000000	14.42 - j 86.279	14.42 - j 105.456

WCAP PART VSWR

WCAP INPUT DATA:

```
      0.5600      0.00000000   0
I       10.00000000   0   3      0.00000000
R        0.00100000   3   2      0.00000000
R       14.74400000   1   0   -106.62000000
C        0.00003000   1   0
L     2842.00000000   2   0      0.00000000
L        5.45000000   2   1      0.00000000WCAP - KPQ TOWER #1
```

Center Frequency: 0.56 MHz

Frequency Range: ±0 kHz

Frequency Step: 0 kHz

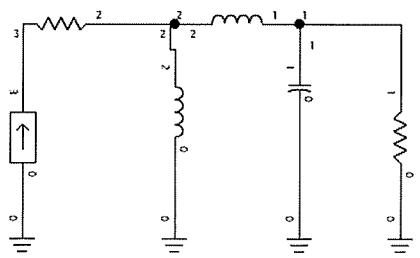


FIGURE 3

TOWER #1 BASE CIRCUIT MODEL DA MODE

WCAP - KPQ TOWER #1 DIRECTIONAL

WCAP OUTPUT AT FREQUENCY: 0.560 MHz

NODE VOLTAGES

Node:	1	1035.4185 ∠ -80.7994° V
Node:	2	762.6266 ∠ -77.4971° V
Node:	3	762.6287 ∠ -77.4964° V

	WCAP PART		CURRENT IN	CURRENT OUT
	WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	3→2	0.00100000	0.01 ∠ 0.000° V	10.00 ∠ 0.000° A
R	1→0	16.62100000	1035.42 ∠ -80.799° V	9.97 ∠ -0.006° A
C	1→0	0.00003000	1035.42 ∠ -80.799° V	0.11 ∠ 9.201° A
L	2→0	2842.00000000	762.63 ∠ -77.497° V	0.08 ∠ -167.497° A
L	2→1	7.83000000	277.56 ∠ 90.094° V	10.07 ∠ 0.094° A

	WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	3→2	0.00100000	16.51 - j 74.454	16.51 - j 74.454
R	1→0	16.62100000	16.62 - j 102.551	0.00 + j 0.000
C	1→0	0.00003000	-0.00 - j 9473.509	0.00 + j 0.000
L	2→0	2842.00000000	0.00 + j 9999.815	0.00 + j 0.000
L	2→1	7.83000000	16.27 - j 73.930	16.27 - j 101.481

WCAP PART	VSWR

WCAP INPUT DATA:

	0.5600	0.00000000	0	
I	10.00000000	0	3	0.00000000
R	0.00100000	3	2	0.00000000
R	16.62100000	1	0	-102.55100000
C	0.00003000	1	0	
L	2842.00000000	2	0	0.00000000
L	7.83000000	2	1	0.00000000

Center Frequency: 0.56 MHz

Frequency Range: ±0 kHz

Frequency Step: 0 kHz

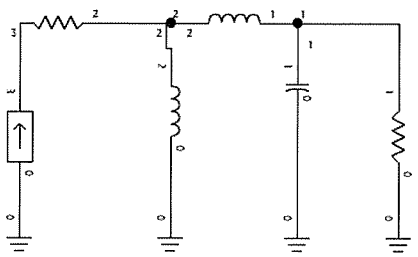


FIGURE 4

TOWER #2 BASE CIRCUIT MODEL DA MODE

WCAP - KPQ TOWER #2 DIRECTIONAL

WCAP OUTPUT AT FREQUENCY: 0.560 MHz

NODE VOLTAGES

Node:	1	1101.7422 ∠	-87.1118° V
Node:	2	908.5320 ∠	-86.5037° V
Node:	3	908.5326 ∠	-86.5030° V

WCAP PART CURRENT IN CURRENT OUT

	WCAP PART		BRANCH VOLTAGE		BRANCH CURRENT	
R	3→2	0.00100000	0.01 ∠	0.000° V	10.00 ∠	0.000° A
R	1→0	5.56900000	1101.74 ∠	-87.112° V	9.97 ∠	-0.002° A
C	1→0	0.00003000	1101.74 ∠	-87.112° V	0.12 ∠	2.888° A
L	2→0	2842.00000000	908.53 ∠	-86.504° V	0.09 ∠	-176.504° A
L	2→1	5.45000000	193.50 ∠	90.031° V	10.09 ∠	0.031° A

	WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	3→2	0.00100000	5.54 - j 90.684	5.54 - j 90.684
R	1→0	5.56900000	5.57 - j 110.315	0.00 + j 0.000
C	1→0	0.00003000	0.00 - j 9473.509	0.00 + j 0.000
L	2→0	2842.00000000	0.00 + j 9999.815	0.00 + j 0.000
L	2→1	5.45000000	5.44 - j 89.872	5.44 - j 109.048

WCAP PART VSWR

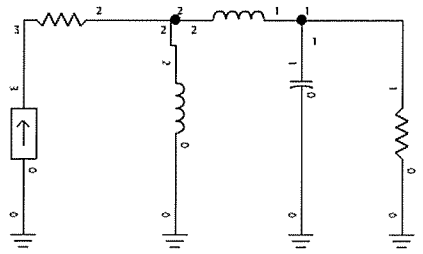
WCAP INPUT DATA:

	0.5600	0.00000000	0	
I	10.00000000	0	3	0.00000000
R	0.00100000	3	2	0.00000000
R	5.56900000	1	0	-110.31500000
C	0.00003000	1	0	
L	2842.00000000	2	0	0.00000000
L	5.45000000	2	1	0.00000000

Center Frequency: 0.56 MHz

Frequency Range: ±0 kHz

Frequency Step: 0 kHz



APPENDIX 1
KPQ-AM
5 KW Night DA
Reference Field Strength Measurements for M.O.M.
April 11, 2012
PI FIM-41 SN 699

Radial	Point	Time	Distance	mV/m	Coordinates (NAD83)		Description
102.5	A	10:18a	1.04 mi	42	47° 26' 53.72"	120° 18' 19.30"	Driveway of 2610 Columbus Ave.
	B	10:26a	1.55 mi	10.5	47° 26' 48.09"	120° 17' 41.01"	50' south of corner of 26th St. on Ashland
	C	10:33a	1.88 mi	24.5	47° 26' 44.24"	120° 17' 16.33"	Front of house 2434 Catalina
149	A	11:42a	1.14 mi	180	47° 26' 14.89"	120° 18' 52.48"	Entrance to Lynden Tree Area
	B	10:58a	3.53 mi	60	47° 24' 28.47"	120° 17' 17.42"	Corner of 2nd St. & Valley Parkway
	C	10:48a	4.01 mi	61	47° 24' 6.57"	120° 16' 58.70"	South entrance to Coast parking lot
195.5	A	11:35a	1.11 mi	45	47° 26' 10.03"	120° 20' 00.06"	Corner of Holbrook & Dartmouth
	B	11:25a	2.01 mi	19.5	47° 25' 25.43"	120° 20' 18.78"	Front of house 1504 Jefferson
	C	11:19a	2.62 mi	21	47° 24' 53.61"	120° 20' 30.94"	50' north of Pacific Lane & Eisenhower Dr.
329	A	9:23a	1.70 mi	420	47° 28' 21.46"	120° 20' 44.87"	SE Corner of School St. & Peters St.
	B	9:33a	2.27 mi	440	47° 28' 47.68"	120° 21' 08.14"	Dirt road beside water line markers
	C	9:42a	2.56 mi	440	47° 29' 00.29"	120° 21' 19.47"	South side of American Fruit Rd. by pole 1723205302

	Ratio	Phase
Tower1	.951	-116.9
Tower2	1.000	0.0