iHeart MEDIA

7136 S Yale Ave
Suite 501
Tulsa, OK 74136

t 918.664.4581
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www.iHeartMedia.com
www.iHeartRadio.com
#iheartradio

2018 JUL -5 PM 1:52

July 3, 2018

Accepted / Filed

JUL -3 2018

Federal Communications Commission
Office of the Secretary

COURIER DELIVERY

Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 Twelfth Street, S.W.
Washington, DC 20554

RE: AMFM Radio Licenses, L.L.C., as debtor in possession (FRN No. 0027342674)
Application for New License on FCC Form 302-AM
KGME (AM), 910 kHz, Phoenix, AZ; Facility ID No. 65480

Dear Ms. Dortch:

On behalf of AMFM Radio Licenses, L.L.C., as debtor in possession, the licensee of the above-referenced station, enclosed is an original and four copies of an application for New License submitted on FCC Form 302-AM.

Also enclosed is Form 159, Remittance Advice, with credit card payment of the $1,505.00 filing fee.

Please stamp and return the additional copy of this submission in the enclosed Federal Express envelope. Please direct communications concerning this application to the undersigned.

Respectfully submitted,
AMFM Radio Licenses, L.L.C., as debtor in possession

By: _____
Stephen G. Davis
Senior Vice President, RE, Facilities & Corporate Development

cc: Public Inspection File

Agency Tracking ID:PGC3115041 Authorization Number:128526
Successful Authorization -- Date Paid: 7/3/18
FILE COPY ONLY!!

READ INSTRUCTIONS CAREFULLY BEFORE PROCEEDING (1) LOCKBOX #979089	FEDERAL COMMUNICATIONS COMMISSION **REMITTANCE ADVICE** **FORM 159** PAGE NO 1 OF 1	APPROVED BY OMB 3060-059 SPECIAL USE FCC USE ONLY

SECTION A - Payer Information

(2) PAYER NAME (if paying by credit card, enter name exactly as it appears on your card)	(3) TOTAL AMOUNT PAID (dollars and cents)
AMFM Radio Licenses, LLC, as debtor in possession	**$1505.00**

(4) STREET ADDRESS LINE NO. 1
7136 S. Yale Avenue
(5) STREET ADDRESS LINE NO. 2
Suite 501

(6) CITY	(7) STATE	(8) ZIP CODE
Tulsa	**OK**	**74136**

(9) DAYTIME TELEPHONE NUMBER (INCLUDING AREA CODE)	(10) COUNTRY CODE (IF NOT IN U.S.A.)
918-6644581	**US**

FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED

(11) PAYER (FRN)	(12) FCC USE ONLY
0027342674	

IF PAYER NAME AND THE APPLICANT NAME ARE DIFFERENT, COMPLETE SECTION B
IF MORE THAN ONE APPLICANT, USE CONTINUATION SHEETS (FORM 159-C)

(13) APPLICANT NAME
AMFM Radio Licenses, LLC, as debtor in possession
(14) STREET ADDRESS LINE NO. 1
7136 S. Yale Avenue
(15) STREET ADDRESS LINE NO. 2
Suite 501

(16) CITY	(17) STATE	(18) ZIP CODE
Tulsa	**OK**	**74136**

(19) DAYTIME TELEPHONE NUMBER (INCLUDING AREA CODE)	(20) COUNTRY CODE (IF NOT IN U.S.A.)
918-6644581	**US**

FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED

(21) APPLICANT (FRN)	(22) FCC USE ONLY
0027342674	

COMPLETE SECTION C FOR EACH SERVICE, IF MORE BOXES ARE NEEDED, USE CONTINUATION SHEET

(23A) FCC Call Sign/Other ID	(24A) Payment Type Code(PTC)	(25A) Quantity
KGME	**MMR**	**1**
(26A) Fee Due for (PTC)	(27A) Total Fee	FCC Use Only
$700.00	**$700.00**	
(28A) FCC CODE 1	(29A) FCC CODE 2	
65480	**302AMNEWLICENSE**	

(23B) FCC Call Sign/Other ID	(24B) Payment Type Code(PTC)	(25B) Quantity
KGME	**MOR**	**1**
(26B) Fee Due for (PTC)	(27B) Total Fee	FCC Use Only
$805.00	**$805.00**	
(28B) FCC CODE 1	(29B) FCC CODE 2	
65480	**302AMDIRANTENNA**	

Accepted / Filed

Federal Communications Commission
Washington, D. C. 20554

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

FOR FCC USE ONLY

JUL -3 2018
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. BL 20180703AAU

SECTION I - APPLICANT FEE INFORMATION

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

AMFM RADIO LICENSES, L.L.C., AS DEBTOR IN POSSESSION

MAILING ADDRESS (Line 1) (Maximum 35 characters)
7136 S YALE AVE

MAILING ADDRESS (Line 2) (Maximum 35 characters)
SUITE 501

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
TULSA	OK	74136

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
918-664-4581	KGME	65480

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
MMR	0001	$ 700.00	

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	$ 805.00	

	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.	$ 1,505.00	

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT AMFM RADIO LICENSES, L.L.C., AS DEBTOR IN POSSESSION		
MAILING ADDRESS 7136 S YALE AVE, SUITE 501		
CITY TULSA	STATE OK	ZIP CODE 74136

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
KGME	PHOENIX, AZ			

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.

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.

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.

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	
Stephen G. Davis		
Title	Date	Telephone Number
SVP, RE, Facilities & Corp Development	07/03/2018	918-664-4581

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
AMFM RADIO LICENSES, L.L.C.

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
KGME		910	UNLIMITED	5.0	5.0

2. Station location

State	City or Town
ARIZONA	PHOENIX

3. Transmitter location

State	County	City or Town	Street address (or other identification)
AZ	MARICOPA	PHOENIX	2901 W. MARYLAND AVENUE

4. Main studio location

State	County	City or Town	Street address (or other identification)
AZ	MARICOPA	PHOENIX	4686 E VAN BUREN ST SUITE 300

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

State	County	City or Town	Street address (or other identification)
AZ	MARICOPA	PHOENIX	4686 E VAN BUREN ST SUITE 300

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.

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
10.39	7.91

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	80.0	-j7.0	+j134.7

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 ASR 1006644	130.8	N/A	0.806	N/A		
Tower #2 ASR 1006643	0.0	N/A	1.0	N/A		
Tower #3 ASR 1006642	-139.0	N/A	0.826	N/A		
Tower #4 ASR 1006641	116.4	N/A	0.191	N/A		

Manufacturer and type of antenna monitor: Potomac Instruments AM-19

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.
4ea. uniform cross section, guyed	4 ea. 91.51	4 ea. 92.51	4 ea. 93	Exhibit No.

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	West Longitude
33 ° 32 ' 00 "	112 ° 07 ' 18 "

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.

see technical narrative

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)
Jacob Wyatt	*Jacob Wyatt*
Address (include ZIP Code)	Date
113 West 4th St Ogallala, NE 69153	Telephone No. (Include Area Code) 308-289-1872

☑ Technical Director ☐ Registered Professional Engineer

☐ Chief Operator ☐ Technical Consultant

☐ Other (specify)

APPLICATION FOR LICENSE INFORMATION

RADIO STATION KGME

AMFM RADIO LICENSES, L.L.C

PHOENIX, ARIZONA

FID 65480

910 KHZ 5KW NDD, 5KW DAN

February 20, 2018

APPLICATION FOR LICENSE INFORMATION
RADIO STATION KGME
PHOENIX, ARIZONA

910 KHZ 5KW NDD, 5KW DAN

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Item 7	RFR Compliance
Item 8	Ground System Detail

EXECUTIVE SUMMARY

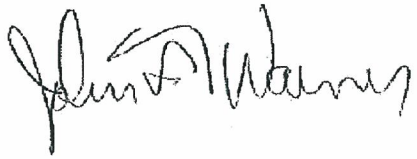
This engineering exhibit has been prepared in support of an application for licensing for radio station KGME, Phoenix Arizona, Facility ID #65480. Measurements included comply with the requirements of Rule Section 73.151c.

The towers and ground system remain as described in current license BZ-901015AI. The system was adjusted to operating parameters computed using the Moment Method process as described in Rule Section 73.151c. MiniNEC Broadcast Professional version 14.6 by EM Scientific Inc. was used in the analysis.

The system has been adjusted to produce nighttime directional antenna parameters within+/- 5% in ratio and +/-3 degrees in phase of the modeled values as prescribed in the Rules.

All measurements contained in this report were made by Mr. Jacob Wyatt of the iHeart Media Corporate Engineering Staff or the undersigned.

Please refer any questions regarding this report to:



John F. Warner

johnwarner@clearchannel.com

443-255-5299

Analysis of Tower Impedance Measurements to Verify Method of Moments Model

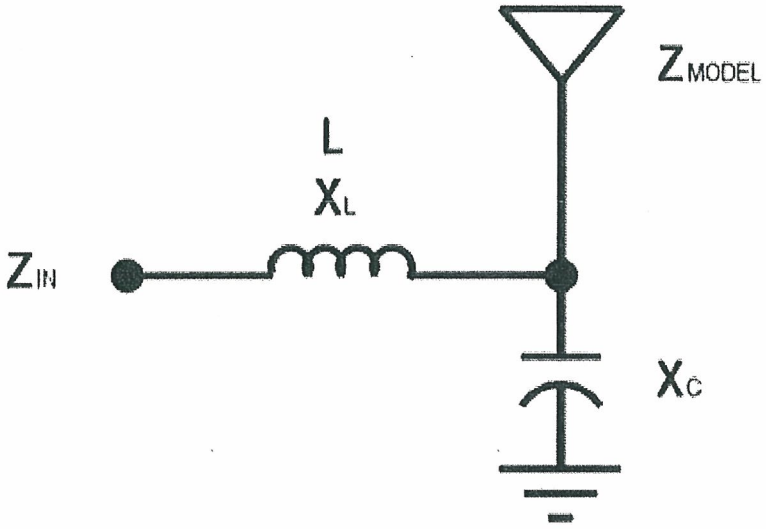
Impedance measurements were made of the individual towers with the other tower bases open. Measurements were made using a Hewlett-Packard 8753ES network analyzer and a Tunwall Radio directional coupler in a calibrated measurement system. Measurements were made immediately adjacent to the toroidal antenna sampling transformers, inside the antenna coupling units. These measured values were related to the modeled values obtained using Expert MININEC Broadcast Professional V14.6. Heights of the towers were adjusted as permitted by Rule Section 73.151(c)(1).

The tower radii were modeled at their actual values. The towers were segmented so that each segment is less than ten (10) degrees in length.

Tower	Actual Height Degrees	Model Height Degrees	Model Percent of Height	Model Equivalent Radius Meters	Model Percent Of Radius
1	100.0	107.5	107.5	0.291	100
2	100.0	108.2	108.2	0.291	100
3	100.0	108.0	108.0	0.291	100
4	100.0	109.0	109.0	0.291	100

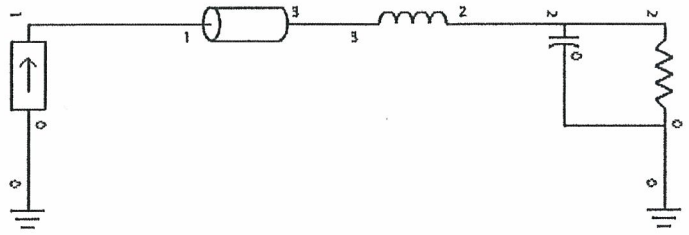
Method of Moments Model Details for Towers Driven Individually

The model was verified by comparison of modeled to measured tower impedances. The tower resistance and reactance were measured immediately adjacent to the toroidal base sampling transformers, inside the antenna tuning unit cabinets. The measured and modeled impedances were correlated using the Westberg Consulting WCAP Pro software program. WCAP is based on the SPICE nodal analysis program. The shunt capacitive reactance of the tower base insulator is represented in the drawing below as Xc. The series inductive reactance of the tower feed conductor is represented as Xl. Z model represents the modeled impedance of the tower and Zin represents the impedance measured at the sampling point. In the following WCAP tabulations, the modeled impedance is represented between nodes 3-0. The measured impedance is represented between nodes 2-0. Node 0 represents ground. The calculated reference point impedances appear under the "TO NODE IMPEDANCE" columns of the WCAP calculations, following the insignificantly short transmission line (TL 1-3) that was included in series with the drive current sources (I 0-1) to provide calculation points for the impedances.



Tower	L (uh)	Xl (+j)	Xc (-j)	Z Modeled	Z in Modeled	Z in Measured
1	2.1	12.01	-2332	81.16 +j124.81	90.48 +j140.55	90.36 +140.54
2	0.55	3.14	-2332	79.01 +j132.55	88.71 +j140.5	88.88 +j140.41
3	1.3	7.43	-2332	78.27 +j131.59	87.8 +j143.77	88.17 +j143.88
4	0.25	1.43	-2332	86.26 +134.71	97.01 +j140.59	97.67 +j140.48

WCAP – **KGME Tower 1 Driven, others floated**



WCAP OUTPUT AT FREQUENCY: 0.910 MHz

NODE VOLTAGES
Node: 1 167.1546 ∠ 57.2285° V
Node: 2 157.1925 ∠ 54.8588° V
Node: 3 167.1544 ∠ 57.2285° V

WCAP PART		CURRENT IN	CURRENT OUT
TL	1→3 50.00000000	1.00 ∠ -0.000° A	1.00 ∠ -0.001° A

WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	2→0 81.16000000	157.19 ∠ 54.859° V	1.06 ∠ -2.107° A
C	2→0 0.00007500	157.19 ∠ 54.859° V	0.07 ∠ 144.859° A
L	3→2 2.10000000	12.01 ∠ 89.999° V	1.00 ∠ -0.001° A

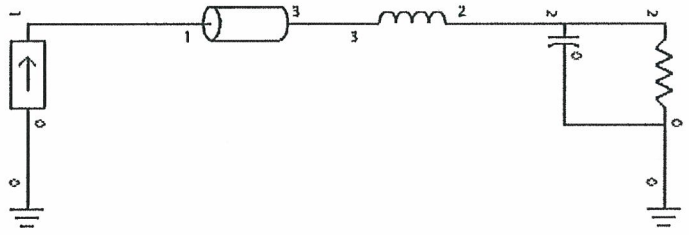
WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	2→0 81.16000000	81.16 + j 124.810	0.00 + j 0.000
C	2→0 0.00007500	0.00 - j 2331.941	0.00 + j 0.000
TL	1→3 50.00000000	90.48 + j 140.550	**90.48 + j 140.548**
L	3→2 2.10000000	90.48 + j 140.548	90.48 + j 128.541

WCAP PART		VSWR
TL	1→3 50.00000000	6.5767

WCAP INPUT DATA:

```
  0.9100    0.00000000  0
R   81.16000000  2  0   124.81000000
C    0.00007500  2  0
I    1.00000000  0  1    0.00000000
TL   50.00000000  1  3   100.00000000    0.00100000    0.00000000
L    2.10000000  3  2    0.00000000
```

WCAP – **KGME Tower 2 driven, others floated**



WCAP OUTPUT AT FREQUENCY: 0.910 MHz

NODE VOLTAGES
Node: 1 166.1594 ∠ 57.7322° V
Node: 2 163.5087 ∠ 57.1438° V
Node: 3 166.1592 ∠ 57.7322° V

	WCAP PART		CURRENT IN	CURRENT OUT
TL	1→3	50.00000000	1.00 ∠ -0.001° A	1.00 ∠ -0.001° A

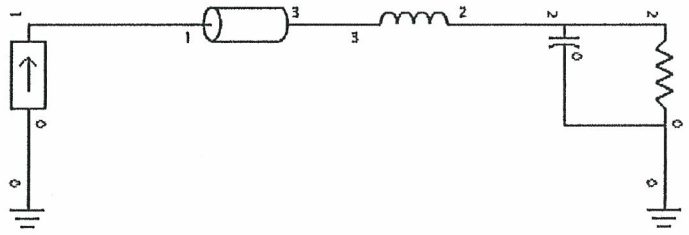
	WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	2→0	79.01000000	163.51 ∠ 57.144° V	1.06 ∠ -2.058° A
C	2→0	0.00007500	163.51 ∠ 57.144° V	0.07 ∠ 147.144° A
L	3→2	0.55000000	3.14 ∠ 89.999° V	1.00 ∠ -0.001° A

	WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	2→0	79.01000000	79.01 + j 132.550	0.00 + j 0.000
C	2→0	0.00007500	0.00 - j 2331.941	0.00 + j 0.000
TL	1→3	50.00000000	88.71 + j 140.498	**88.71 + j 140.496**
L	3→2	0.55000000	88.71 + j 140.496	88.71 + j 137.352

	WCAP PART		VSWR
TL	1→3	50.00000000	6.6376

WCAP INPUT DATA:
0.9100 0.00000000 0
R 79.01000000 2 0 132.55000000
C 0.00007500 2 0
I 1.00000000 0 1 0.00000000
TL 50.00000000 1 3 100.00000000 0.00100000 0.00000000
L 0.55000000 3 2 0.00000000

WCAP – **KGME Tower 3 driven, others floated**



WCAP OUTPUT AT FREQUENCY: 0.910 MHz

NODE VOLTAGES
Node: 1 168.4625 ∠ 58.5869° V
Node: 2 162.1648 ∠ 57.2179° V
Node: 3 168.4623 ∠ 58.5868° V

WCAP PART		CURRENT IN	CURRENT OUT
TL	1→3 50.00000000	1.00 ∠ -0.000° A	1.00 ∠ -0.001° A

WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	2→0 78.27000000	162.16 ∠ 57.218° V	1.06 ∠ -2.038° A
C	2→0 0.00007500	162.16 ∠ 57.218° V	0.07 ∠ 147.218° A
L	3→2 1.30000000	7.43 ∠ 89.999° V	1.00 ∠ -0.001° A

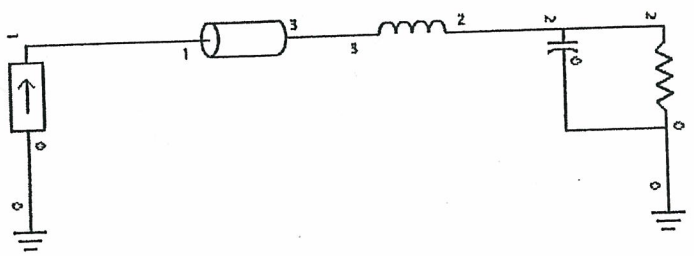
WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	2→0 78.27000000	78.27 + j 131.590	0.00 + j 0.000
C	2→0 0.00007500	0.00 - j 2331.941	0.00 + j 0.000
TL	1→3 50.00000000	87.80 + j 143.771	**87.80 + j 143.769**
L	3→2 1.30000000	87.80 + j 143.769	87.80 + j 136.336

WCAP PART		VSWR
TL	1→3 50.00000000	6.8886

WCAP INPUT DATA:

```
  0.9100    0.00000000  0
R   78.27000000  2  0  131.59000000
C    0.00007500  2  0
I    1.00000000  0  1   0.00000000
TL   50.00000000  1  3  100.00000000   0.00100000   0.00000000
L    1.30000000  3  2   0.00000000
```

WCAP – **KGME Tower 4 driven, others floated**



WCAP OUTPUT AT FREQUENCY: 0.910 MHz

NODE VOLTAGES
Node: 1 170.8151 ∡ 55.3924° V
Node: 2 169.6403 ∡ 55.1182° V
Node: 3 170.8149 ∡ 55.3924° V

WCAP PART		CURRENT IN	CURRENT OUT
TL 1→3	50.00000000	1.00 ∡ 0.000° A	1.00 ∡ -0.001° A

WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R 2→0	86.26000000	169.64 ∡ 55.118° V	1.06 ∡ -2.249° A
C 2→0	0.00007500	169.64 ∡ 55.118° V	0.07 ∡ 145.118° A
L 3→2	0.25000000	1.43 ∡ 89.999° V	1.00 ∡ -0.001° A

WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R 2→0	86.26000000	86.26 + j 134.710	0.00 + j 0.000
C 2→0	0.00007500	0.00 - j 2331.941	0.00 + j 0.000
TL 1→3	50.00000000	97.01 + j 140.591	**97.01 + j 140.590**
L 3→2	0.25000000	97.01 + j 140.590	97.01 + j 139.160

WCAP PART		VSWR
TL 1→3	50.00000000	6.3736

WCAP INPUT DATA:

```
  0.9100    0.00000000  0
R   86.26000000  2  0   134.71000000
C    0.00007500  2  0
I    1.00000000  0  1    0.00000000
TL  50.00000000  1  3  100.00000000   0.00100000   0.00000000
L    0.25000000  3  2    0.00000000
```

Tower 1 driven, others floated

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
.91	81.155	124.81	148.87	57.	5.9088	-2.9686	-3.0524

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.291	15
		0	0	107.5		
2	none	120.	176.	0	.291	15
		120.	176.	108.2		
3	none	240.	176.	0	.291	15
		240.	176.	108.		
4	none	360.	176.	0	.291	15
		360.	176.	109.		

Number of wires = 4
current nodes = 60

	minimum wire	minimum value	maximum wire	maximum value
Individual wires				
segment length	1	7.16667	4	7.26667
radius	1	.291	1	.291

ELECTRICAL DESCRIPTION
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.91	0	1	.0199074	.0201852

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	16	0	-2,332.	0	0	0
2	31	0	-2,332.	0	0	0
3	46	0	-2,332.	0	0	0

Tower 2 driven, others floated

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 16, sector 1							
.91	79.009	132.55	154.31	59.2	6.5069	-2.6911	-3.3549

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.291	15
		0	0	107.5		
2	none	120.	176.	0	.291	15
		120.	176.	108.2		
3	none	240.	176.	0	.291	15
		240.	176.	108.		
4	none	360.	176.	0	.291	15
		360.	176.	109.		

Number of wires = 4
current nodes = 60

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	1	7.16667	4	7.26667
radius	1	.291	1	.291

ELECTRICAL DESCRIPTION
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	.91	0	1	.0199074	.0201852

Sources

source	node	sector	magnitude	phase	type
1	16	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-2,332.	0	0	0
2	31	0	-2,332.	0	0	0
3	46	0	-2,332.	0	0	0

Tower 3 driven, others floated

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 31, sector 1							
.91	78.273	131.59	153.11	59.3	6.4742	-2.7049	-3.3388

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.291	15
		0	0	107.5		
2	none	120.	176.	0	.291	15
		120.	176.	108.2		
3	none	240.	176.	0	.291	15
		240.	176.	108.		
4	none	360.	176.	0	.291	15
		360.	176.	109.		

Number of wires = 4
current nodes = 60

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	1	7.16667	4	7.26667
radius	1	.291	1	.291

ELECTRICAL DESCRIPTION
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.91	0	1	.0199074	.0201852

Sources

source	node	sector	magnitude	phase	type
1	31	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-2,332.	0	0	0
2	16	0	-2,332.	0	0	0
3	46	0	-2,332.	0	0	0

Tower 4 driven, others floated

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 46, sector 1							
.91	86.263	134.71	159.97	57.4	6.3551	-2.7564	-3.28

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.291	15
		0	0	107.5		
2	none	120.	176.	0	.291	15
		120.	176.	108.2		
3	none	240.	176.	0	.291	15
		240.	176.	108.		
4	none	360.	176.	0	.291	15
		360.	176.	109.		

Number of wires = 4
current nodes = 60

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	1	7.16667	4	7.26667
radius	1	.291	1	.291

ELECTRICAL DESCRIPTION
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.91	0	1	.0199074	.0201852

Sources

source	node	sector	magnitude	phase	type
1	46	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-2,332.	0	0	0
2	16	0	-2,332.	0	0	0
3	31	0	-2,332.	0	0	0

CURRENT NODES

wire	coordinates (degrees) X	Y	Z	connections end1	end2	node no.
1	0	0	0	GND	1	1
1	0	0	7.16667	1	1	2
1	0	0	14.3333	1	1	3
1	0	0	21.5	1	1	4
1	0	0	28.6667	1	1	5
1	0	0	35.8333	1	1	6
1	0	0	43.	1	1	7
1	0	0	50.1667	1	1	8
1	0	0	57.3333	1	1	9
1	0	0	64.5	1	1	10
1	0	0	71.6667	1	1	11
1	0	0	78.8333	1	1	12
1	0	0	86.	1	1	13
1	0	0	93.1667	1	1	14
1	0	0	100.333	1	END	15
2	-119.708	-8.37079	0	GND	2	16
2	-119.708	-8.37079	7.21333	2	2	17
2	-119.708	-8.37079	14.4267	2	2	18
2	-119.708	-8.37079	21.64	2	2	19
2	-119.708	-8.37079	28.8533	2	2	20
2	-119.708	-8.37079	36.0667	2	2	21
2	-119.708	-8.37079	43.28	2	2	22
2	-119.708	-8.37079	50.4933	2	2	23
2	-119.708	-8.37079	57.7067	2	2	24
2	-119.708	-8.37079	64.92	2	2	25
2	-119.708	-8.37079	72.1333	2	2	26
2	-119.708	-8.37079	79.3467	2	2	27
2	-119.708	-8.37079	86.56	2	2	28
2	-119.708	-8.37079	93.7733	2	2	29
2	-119.708	-8.37079	100.987	2	END	30
3	-239.415	-16.7416	0	GND	3	31
3	-239.415	-16.7416	7.2	3	3	32
3	-239.415	-16.7416	14.4	3	3	33
3	-239.415	-16.7416	21.6	3	3	34
3	-239.415	-16.7416	28.8	3	3	35
3	-239.415	-16.7416	36.	3	3	36
3	-239.415	-16.7416	43.2	3	3	37
3	-239.415	-16.7416	50.4	3	3	38
3	-239.415	-16.7416	57.6	3	3	39
3	-239.415	-16.7416	64.8	3	3	40
3	-239.415	-16.7416	72.	3	3	41
3	-239.415	-16.7416	79.2	3	3	42
3	-239.415	-16.7416	86.4	3	3	43
3	-239.415	-16.7416	93.6	3	3	44
3	-239.415	-16.7416	100.8	3	END	45
4	-359.123	-25.1124	0	GND	4	46
4	-359.123	-25.1124	7.26667	4	4	47
4	-359.123	-25.1124	14.5333	4	4	48
4	-359.123	-25.1124	21.8	4	4	49
4	-359.123	-25.1124	29.0667	4	4	50
4	-359.123	-25.1124	36.3333	4	4	51
4	-359.123	-25.1124	43.6	4	4	52
4	-359.123	-25.1124	50.8667	4	4	53
4	-359.123	-25.1124	58.1333	4	4	54

4	-359.123	-25.1124	65.4	4	4	55
4	-359.123	-25.1124	72.6667	4	4	56
4	-359.123	-25.1124	79.9333	4	4	57
4	-359.123	-25.1124	87.2	4	4	58
4	-359.123	-25.1124	94.4667	4	4	59
4	-359.123	-25.1124	101.733	4	END	60

Derivation of Operating Parameters, Nighttime
Directional Array

Following verification of the moment method model of the individual array elements, by comparison of the measured and modeled base impedances, directional antenna array base parameters were calculated. Calculations were made to determine the complex voltage sources which when applied to the base of each array element produce current moment sums which when normalized, equate to the theoretical field parameters of the authorized directional pattern. Using these voltages, the tower currents were calculated. The currents at the ATU sampling points were related to those of the moment method model by using the WCAP Pro nodal analysis program from Westberg Consulting. The assumptions that were used for the single tower calculations were used in the directional array case as well. In the following WCAP calculations node 3 represents the reference point, node 2 represents the tower feed point, and node 0 represents ground. The tower operating impedance is represented from node 2 to ground (R 2-0). The current magnitude and phases at the sample point is represented following the insignificantly short transmission line (TL 1-3). The value shown at TL 1-3 has been rounded by the program. The actual current values shown as "I" in the "WCAP INPUT DATA" represent the values before rounding and were used in the calculation of antenna monitor amplitude and phase indications to yield greater accuracy.

Additionally, a single static drain is installed on each tower and is represented from node 2 to ground (L 2-0). These static drains are of unknown manufacturer with no indicated impedance. The static drains were disconnected and measured directly and tabulated accordingly.

In so much as the sample lines are equal in length and the sample torroids responses are identical, the antenna monitor amplitudes and phases have been calculated directly from the reference point currents and phases.

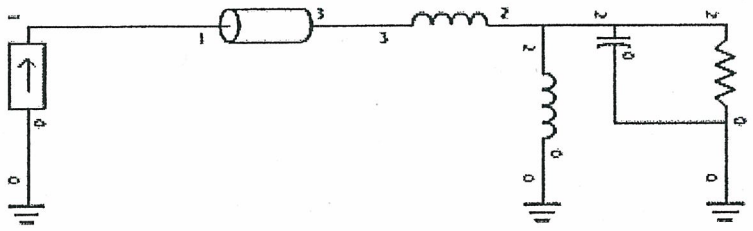
Calculated Night Parameters

Tower	Model Pulse	Model Current Magnitude At Torroid, Amps	Model Current Phase at Torroid, Degrees	Modeled Antenna Monitor Ratio	Modeled Antenna Monitor Phase, Degrees
1	1	4.520	2.87	0.806	130.8
2	16	5.606	232.11	1.0	0.0
3	31	4.633	93.14	0.826	-139.0
4	46	1.072	348.48	0.191	116.4

Measured Static Drain Impedances

Tower	L (uh)	Xl (+j)
1	344uH	1966.9
2	314uH	1795.4
3	304uH	1738.2
4	329uH	1881.1

WCAP Circuit Diagram



WCAP - KGME T1 DAN-U

WCAP OUTPUT AT FREQUENCY: 0.910 MHz

NODE VOLTAGES
Node: 1 594.0080 ∠ 80.2040° V
Node: 2 544.8104 ∠ 78.9524° V
Node: 3 594.0067 ∠ 80.2040° V

WCAP PART		CURRENT IN	CURRENT OUT
TL	1→3 50.00000000	4.52 ∠ 2.870° A	4.52 ∠ 2.870° A

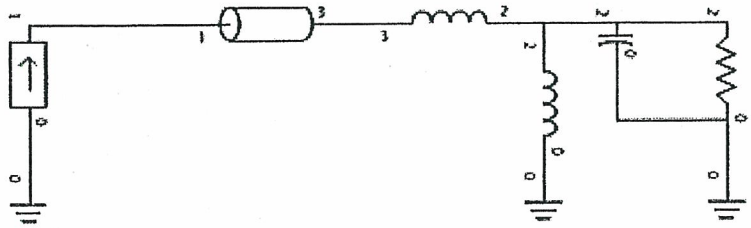
WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	2→0 29.70000000	544.81 ∠ 78.952° V	**4.45 ∠ 2.999° A**
C	2→0 0.00007500	544.81 ∠ 78.952° V	0.23 ∠ 168.952° A
L	3→2 2.10000000	50.74 ∠ 93.768° V	4.23 ∠ 3.768° A
L	3→0 344.00000000	594.01 ∠ 80.204° V	0.30 ∠ -9.796° A

WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	2→0 29.70000000	29.70 + j 118.710	0.00 + j 0.000
C	2→0 0.00007500	0.00 - j 2331.941	0.00 + j 0.000
TL	1→3 50.00000000	28.82 + j 128.220	28.81 + j 128.218
L	3→2 2.10000000	32.97 + j 136.642	32.97 + j 124.635
L	3→0 344.00000000	-0.00 + j 1966.888	0.00 + j 0.000

WCAP PART		VSWR
TL	1→3 50.00000000	13.6489

WCAP INPUT DATA:
0.9100 0.00000000 0
R 29.70000000 2 0 118.71000000
C 0.00007500 2 0
I 4.52000000 0 1 2.87000000
TL 50.00000000 1 3 100.00000000 0.00100000 0.00000000
L 2.10000000 3 2 0.00000000
L 344.00000000 3 0 0.00000000

WCAP Circuit Diagram



WCAP – KGME T2 DAN-U

WCAP OUTPUT AT FREQUENCY: 0.910 MHz

NODE VOLTAGES
Node: 1 1050.1032 ∠ -58.2753° V
Node: 2 1035.4336 ∠ -58.6151° V
Node: 3 1050.1017 ∠ -58.2753° V

WCAP PART		CURRENT IN	CURRENT OUT
TL	1→3 50.00000000	5.61 ∠ -127.890° A	5.61 ∠ -127.890° A

WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	2→0 68.45000000	1035.43 ∠ -58.615° V	**5.47 ∠ -127.403° A**
C	2→0 0.00007500	1035.43 ∠ -58.615° V	0.44 ∠ 31.385° A
L	3→2 0.55000000	15.92 ∠ -35.584° V	5.06 ∠ -125.584° A
L	3→0 314.00000000	1050.10 ∠ -58.275° V	0.58 ∠ -148.275° A

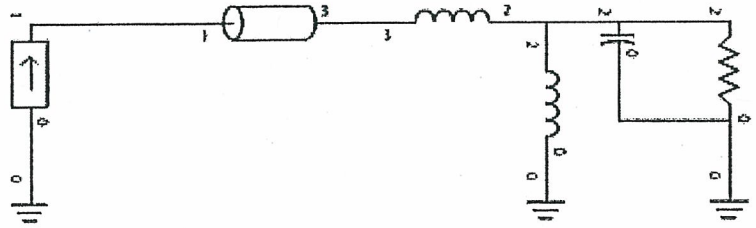
WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	2→0 68.45000000	68.45 + j 176.360	0.00 + j 0.000
C	2→0 0.00007500	0.00 - j 2331.941	0.00 + j 0.000
TL	1→3 50.00000000	65.25 + j 175.586	65.25 + j 175.583
L	3→2 0.55000000	80.03 + j 191.392	80.03 + j 188.248
L	3→0 314.00000000	0.00 + j 1795.357	0.00 + j 0.000

WCAP PART		VSWR
TL	1→3 50.00000000	11.4340

WCAP INPUT DATA:

```
  0.9100    0.00000000  0
R   68.45000000  2  0  176.36000000
C    0.00007500  2  0
I    5.60600000  0  1  232.11000000
TL   50.00000000  1  3  100.00000000   0.00100000   0.00000000
L    0.55000000  3  2   0.00000000
L  314.00000000  3  0   0.00000000
```

WCAP Circuit Diagram



WCAP - KGME T3 DAN-U

WCAP OUTPUT AT FREQUENCY: 0.910 MHz

NODE VOLTAGES
Node: 1 1090.4295 ∡ 161.0484° V
Node: 2 1063.2604 ∡ 160.3504° V
Node: 3 1090.4283 ∡ 161.0484° V

WCAP PART		CURRENT IN	CURRENT OUT
TL	1→3 50.00000000	4.63 ∡ 93.140° A	4.63 ∡ 93.139° A

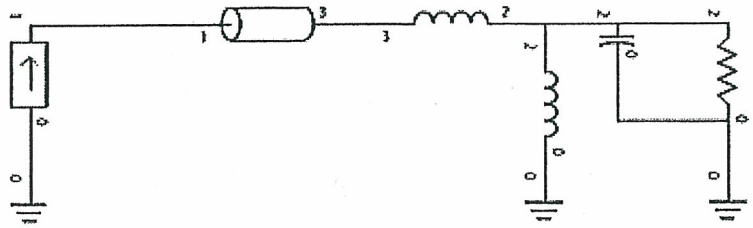
WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	2→0 94.98000000	1063.26 ∡ 160.350° V	**4.47 ∡ 93.899° A**
C	2→0 0.00007500	1063.26 ∡ 160.350° V	0.46 ∡ -109.650° A
L	3→2 1.30000000	30.17 ∡ -173.528° V	4.06 ∡ 96.472° A
L	3→0 304.00000000	1090.43 ∡ 161.048° V	0.63 ∡ 71.048° A

WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	2→0 94.98000000	94.98 + j 217.930	0.00 + j 0.000
C	2→0 0.00007500	0.00 - j 2331.941	0.00 + j 0.000
TL	1→3 50.00000000	88.52 + j 218.082	88.51 + j 218.077
L	3→2 1.30000000	115.34 + j 242.647	115.34 + j 235.214
L	3→0 304.00000000	0.01 + j 1738.180	0.00 + j 0.000

WCAP PART		VSWR
TL	1→3 50.00000000	13.0042

WCAP INPUT DATA:
0.9100 0.00000000 0
R 94.98000000 2 0 217.93000000
C 0.00007500 2 0
I **4.63300000 0 1 93.14000000**
TL 50.00000000 1 3 100.00000000 0.00100000 0.00000000
L 1.30000000 3 2 0.00000000
L 304.00000000 3 0 0.00000000

WCAP Circuit Diagram



WCAP - KGME T4 DAN-U

WCAP OUTPUT AT FREQUENCY: 0.910 MHz

NODE VOLTAGES
Node: 1 663.2245 ∠ 39.1158° V
Node: 2 662.5441 ∠ 39.0317° V
Node: 3 663.2242 ∠ 39.1158° V

WCAP PART		CURRENT IN	CURRENT OUT
TL	1→3 50.00000000	1.07 ∠ -11.520° A	1.07 ∠ -11.523° A

WCAP PART		BRANCH VOLTAGE	BRANCH CURRENT
R	2→0 433.61000000	662.54 ∠ 39.032° V	**1.02 ∠ -9.101° A**
C	2→0 0.00007500	662.54 ∠ 39.032° V	0.28 ∠ 129.032° A
L	3→2 0.25000000	1.19 ∠ 94.103° V	0.83 ∠ 4.103° A
L	3→0 329.00000000	663.22 ∠ 39.116° V	0.35 ∠ -50.884° A

WCAP PART		FROM IMPEDANCE	TO IMPEDANCE
R	2→0 433.61000000	433.61 + j 483.820	0.00 + j 0.000
C	2→0 0.00007500	0.00 - j 2331.941	0.00 + j 0.000
TL	1→3 50.00000000	392.40 + j 478.320	392.35 + j 478.311
L	3→2 0.25000000	654.34 + j 458.387	654.34 + j 456.957
L	3→0 329.00000000	0.00 + j 1881.123	0.00 + j 0.000

WCAP PART		VSWR
TL	1→3 50.00000000	19.5855

WCAP INPUT DATA:
0.9100 0.00000000 0
R 433.61000000 2 0 483.82000000
C 0.00007500 2 0
I **1.07200000 0 1 348.48000000**
TL 50.00000000 1 3 100.00000000 0.00100000 0.00000000
L 0.25000000 3 2 0.00000000
L 329.00000000 3 0 0.00000000

MEDIUM WAVE ARRAY SYNTHESIS FROM FIELD RATIOS

Frequency = .91 MHz

tower	field ratio magnitude	phase (deg)
1	1.	0
2	1.37	-133.7
3	1.2	85.7
4	.424	-34.4

VOLTAGES AND CURRENTS - rms

source node	voltage magnitude	phase (deg)	current magnitude	phase (deg)
1	544.82	79.	4.45224	3.
16	1,035.39	301.4	5.47302	232.6
31	1,065.66	160.4	4.48271	93.9
46	663.512	39.1	1.02127	350.9

Sum of square of source currents = 141.828
Total power = 5,000. watts

TOWER ADMITTANCE MATRIX

admittance	real (mhos)	imaginary (mhos)
Y(1, 1)	.00406472	-.0052319
Y(1, 2)	.00217645	-.000305679
Y(1, 3)	-.000290985	-.000795582
Y(1, 4)	-.000299832	.000243754
Y(2, 1)	.00217645	-.00030569
Y(2, 2)	.00430315	-.00465758
Y(2, 3)	.0022651	-.000534203
Y(2, 4)	-.000296012	-.000754977
Y(3, 1)	-.000290986	-.000795583
Y(3, 2)	.0022651	-.0005342
Y(3, 3)	.00433931	-.00471964
Y(3, 4)	.00209457	-.000323135
Y(4, 1)	-.000299834	.000243754
Y(4, 2)	-.000296013	-.000754979
Y(4, 3)	.00209456	-.00032315
Y(4, 4)	.00375382	-.00490134

TOWER IMPEDANCE MATRIX

impedance	real (ohms)	imaginary (ohms)
Z(1, 1)	81.5035	124.405
Z(1, 2)	13.0676	-45.0732
Z(1, 3)	-32.7828	4.33914
Z(1, 4)	16.4867	20.0016
Z(2, 1)	13.0679	-45.0731
Z(2, 2)	80.4003	131.385
Z(2, 3)	16.8616	-45.8689
Z(2, 4)	-33.8552	4.92309
Z(3, 1)	-32.7828	4.33909
Z(3, 2)	16.8615	-45.869
Z(3, 3)	79.6561	130.326
Z(3, 4)	13.1656	-46.4222
Z(4, 1)	16.4867	20.0016
Z(4, 2)	-33.8553	4.92302
Z(4, 3)	13.1661	-46.4223

Z(4, 4) 86.6579 134.291

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
.91	29.702	118.71	122.37	76.	11.681	-1.4908	-5.3677
source = 2; node 16, sector 1							
.91	68.451	176.36	189.18	68.8	11.097	-1.5697	-5.181
source = 3; node 31, sector 1							
.91	94.981	217.93	237.73	66.5	12.345	-1.4102	-5.571
source = 4; node 46, sector 1							
.91	433.61	483.82	649.69	48.1	19.533	-.89012	-7.3208

CURRENT rms
Frequency = .91 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	4.45225	3.	4.44606	.234675
2	0	0	7.16667	4.80107	1.9	4.7984	.159943
3	0	0	14.3333	4.96589	1.3	4.96468	.109386
4	0	0	21.5	5.0297	.8	5.02926	.0668123
5	0	0	28.6667	5.00371	.3	5.00362	.0303854
6	0	0	35.8333	4.89346	360.	4.89346	-4.54E-04
7	0	0	43.	4.70313	359.7	4.70305	-.0258453
8	0	0	50.1667	4.43678	359.4	4.43654	-.0457795
9	0	0	57.3333	4.09883	359.2	4.09839	-.0602061
10	0	0	64.5	3.69409	358.9	3.69345	-.0690774
11	0	0	71.6667	3.22772	358.7	3.22691	-.0723675
12	0	0	78.8333	2.70482	358.5	2.70391	-.0700738
13	0	0	86.	2.12986	358.3	2.12895	-.0621996
14	0	0	93.1667	1.50483	358.1	1.50405	-.0486836
15	0	0	100.333	.824162	358.	.823645	-.029183
END	0	0	107.5	0	0	0	0
GND	-119.708	-8.37079	0	5.47302	232.6	-3.32289	-4.34884
17	-119.708	-8.37079	7.21333	6.13147	230.1	-3.92985	-4.70651
18	-119.708	-8.37079	14.4267	6.48397	228.8	-4.27253	-4.87722
19	-119.708	-8.37079	21.64	6.67996	227.8	-4.48965	-4.9462
20	-119.708	-8.37079	28.8533	6.73831	227.	-4.59878	-4.92504
21	-119.708	-8.37079	36.0667	6.66752	226.3	-4.6074	-4.81952
22	-119.708	-8.37079	43.28	6.47338	225.7	-4.52012	-4.63392
23	-119.708	-8.37079	50.4933	6.16133	225.2	-4.34093	-4.37245
24	-119.708	-8.37079	57.7067	5.73726	224.8	-4.07401	-4.03964
25	-119.708	-8.37079	64.92	5.20774	224.4	-3.72394	-3.64045
26	-119.708	-8.37079	72.1333	4.57984	224.	-3.2957	-3.18014
27	-119.708	-8.37079	79.3467	3.86075	223.6	-2.79435	-2.66402
28	-119.708	-8.37079	86.56	3.05677	223.3	-2.22433	-2.09671
29	-119.708	-8.37079	93.7733	2.17075	223.	-1.58757	-1.48047
30	-119.708	-8.37079	100.987	1.19452	222.7	-.877824	-.810126
END	-119.708	-8.37079	108.2	0	0	0	0

GND	-239.415	-16.7416	0	4.48272	93.9	-.305753	4.47228
32	-239.415	-16.7416	7.2	5.15716	90.6	-.050822	5.1569
33	-239.415	-16.7416	14.4	5.5351	88.8	.115441	5.5339
34	-239.415	-16.7416	21.6	5.76629	87.5	.248847	5.76092
35	-239.415	-16.7416	28.8	5.86896	86.5	.355881	5.85816
36	-239.415	-16.7416	36.	5.85096	85.7	.438698	5.83449
37	-239.415	-16.7416	43.2	5.7173	85.	.498067	5.69556
38	-239.415	-16.7416	50.4	5.47258	84.4	.534314	5.44644
39	-239.415	-16.7416	57.6	5.12179	83.9	.547665	5.09243
40	-239.415	-16.7416	64.8	4.6705	83.4	.538394	4.63937
41	-239.415	-16.7416	72.	4.1248	82.9	.506857	4.09354
42	-239.415	-16.7416	79.2	3.4909	82.5	.453474	3.46133
43	-239.415	-16.7416	86.4	2.77425	82.2	.378588	2.74829
44	-239.415	-16.7416	93.6	1.97714	81.8	.282107	1.95691
45	-239.415	-16.7416	100.8	1.09178	81.4	.162348	1.07965
END	-239.415	-16.7416	108.	0	0	0	0
GND	-359.123	-25.1124	0	1.02127	350.9	1.00854	-.160749
47	-359.123	-25.1124	7.26667	1.40271	338.	1.30024	-.526286
48	-359.123	-25.1124	14.5333	1.65577	332.8	1.47248	-.757206
49	-359.123	-25.1124	21.8	1.84484	329.6	1.5909	-.934053
50	-359.123	-25.1124	29.0667	1.97609	327.3	1.66366	-1.06638
51	-359.123	-25.1124	36.3333	2.05179	325.7	1.69407	-1.15758
52	-359.123	-25.1124	43.6	2.07312	324.3	1.684	-1.20912
53	-359.123	-25.1124	50.8667	2.04119	323.2	1.63503	-1.22194
54	-359.123	-25.1124	58.1333	1.95732	322.3	1.54873	-1.19689
55	-359.123	-25.1124	65.4	1.82322	321.5	1.42691	-1.13493
56	-359.123	-25.1124	72.6667	1.64089	320.8	1.27149	-1.03723
57	-359.123	-25.1124	79.9333	1.41252	320.2	1.08453	-.904991
58	-359.123	-25.1124	87.2	1.14003	319.6	.867811	-.739302
59	-359.123	-25.1124	94.4667	.824111	319.	.622215	-.540376
60	-359.123	-25.1124	101.733	.461149	318.5	.345409	-.305534
END	-359.123	-25.1124	109.	0	0	0	0

Sampling System Measurements

The following calculations confirm that the sample system as installed complies with Rule Section 73.151(c)(2)(1) in all respects. The sample toroids are Delta model TCT3 and their outputs are in agreement within the manufacturer's specification of +/-2% and +/-2º. The antenna monitor is a Potomac Instruments model AM19. The antenna monitor was recently returned to the manufacturer for calibration and holds a certificate of calibration dated 10/20/2017. The sample lines are equal in length and constructed of 3/8" Andrew FHJ2-50A coaxial cable that has a solid outer conductor and foam dielectric. The cables are equal in length within 1º as required. The cables have all been buried so as to be exposed to the same environmental conditions. The length of the cables was confirmed by measuring the impedance, looking into the line with the far end opened. The lines were found to be 7/4 wavelength long at the frequencies listed. These frequencies were used to calculate the electrical lengths of the lines at the operating frequency of 910 kHz. Frequencies were calculated at which the lines were +/- 45º the length of the resonate frequency. The impedance was then calculated using the following formula:

$$Zo = ((R1^2+X1^2)^{1/2} * (R2^2+X2^2)^{1/2})^{1/2}$$

Sample Line Length Calculation

Tower	Resonate Frequency At 630º, kHz	Electrical Length at 910 kHz, Degrees
1	944.01	607.30
2	943.71	607.50
3	943.54	607.60
4	943.36	607.72

Sample Line Impedance Calculation

Tower	630º Resonant Frequency kHz	45º Above Resonant Frequency kHz	Resistance Ohms	Reactance Ohms	45º Below Resonant Frequency kHz	Resistance Ohms	Reactance Ohms	Characteristic Impedance Ohms
1	944.01	1011.44	25.28	43.87	876.58	21.5	-44.8	50.16
2	943.71	1011.12	25.47	43.53	876.30	21.25	-44.23	49.75
3	943.54	1010.94	25.02	42.46	876.15	21.25	-43.43	48.81
4	943.36	1010.74	25.21	42.69	875.98	21.07	-43.40	48.91

The sample toroid calibration was confirmed by passing a common conductor through the toroids. The common conductor was driven by a Hewlett-Packard 8753ES vector network analyzer that was properly calibrated for response measurement. The output from the tower #2 toroid was fed to the reference receiver of the analyzer and the remaining toroids outputs were alternately fed to the B input, and the results noted in the chart below.

Sample Toroid Calibration Verification

Tower	Serial Number	Indicated Ratio	Indicated Phase
1	1846	1.002	-0.261º
2	1697	1.00	0.0º
3	1678	.9996	-0.101º
4	1705	.9994	0.184º

Sample Lines Terminated By Toroids

Tower	Serial Number	Impedance at Input to Sample Line with Torroid Connected
1	1846	52.85 –j1.67
2	1697	52.49 –j3.46
3	1678	50.74 –j1.59
4	1705	50.51-j2.96

Direct Measurement of Power

The common point network in the nighttime phasor was adjusted to provide the proper operating resistance of 50 ohms and a reactance of 0 (zero) ohms to the transmitter output. In order to compensate for hookup inductance between the power measurement point and the transmitter the common point reactance was set for a value of –j7 at the measurement point. The antenna operating powers were calculated by adding 8.0% to the nominal operating power of 5.0kW. The common point current was then calculated as indicated below.

Daytime non directional mode power measurements are made at the base of tower #4. Daytime operating impedance measures 80 +j134.7. Tower #4 current was calculated as indicated below.

Pattern	Nominal Power Watts	Operating Power Watts	Operating Common Point Current, Amps
Night	5000	5400	10.39
Day	5000	5000	7.91

Reference Field Strength Measurements

Reference field strength measurements were made on radials having existing monitor point limits on the current license as well as on radials in the main lobes as follows:

KGME DAN-U

Reference Field Strength Measurements

Point #	Distance/ km	Field Strength mv/m	Location Description	GPS Coordinates NAD27
1-1	2.29	119	2911 Loma Ln	N33° 33' 14.36" W112° 07' 16.35"
1-2	3.07	76.1	2911 Seldon Ln	N33° 33' 39.38" W112° 07' 16.03"
1-3	3.7	60.1	2912 W Puget Ave	N33° 34' 0.16" W112° 07' 15.33"
36-1	2.43	38.8	2216 W Augusta Ave	N33° 33' 5.26" W112° 06' 21.39"
36-2	3.76	25.6	1829 W Seldon Way	N33° 33' 40.16" W112° 05' 50.80"
36-3	4.22	21.0	8802 N 17th Ave	N33° 33' 52.05" W112° 05' 40.83"
117-1	3.44	188	5627 N 13th Dr	N33° 31' 10.21" W112° 05' 19.50"
117-2	3.84	157	903 W Marshall Av	N33° 31' 2.95" W112° 05' 2.79"
117-3	4.5	120	5302 W Georgia Ave	N33° 30' 53.18" W112° 04' 39.63"
176-1	2.25	680	2816 W Colter St	N33° 30' 47.43" W112° 07' 11.82"
176-2	3.04	490	4641 W Highland Ave	N33° 30' 21.97" W112° 07' 9.61"
176-3	3.63	328	4418 N 28th Ave	N33° 30' 2.74" W112° 07' 7.89"

254-1	2.14	51.8	3922 Claremont St	N33° 31' 41.70" W112° 08' 35.97"
254-2	2.77	25.3	4232 Keim	N33° 31' 36.56" W112° 08' 57.91"
254-3	3.81	24.1	6002 N 47th Dr	N33° 31' 27.06" W112° 09' 37.27"
302-1	2.09	46.1	3817 W Northview Ave	N33° 32' 36.62" W112° 08' 27.77"
302-2	3.1	26.3	4236 Morten Ave	N33° 32' 52.42" W112° 08' 58.07"
302-3	4.09	26.2	4627 W Lane Ave	N33° 33' 9.26" W112° 09' 30.30"

All measurements were taken January 18th, 2017 with Potomac Instruments FIM-4100 field strength meter with serial number 133. The meter was calibrated by its manufacturer on April 17, 2017.

Item 7

RFR Compliance

Operation of KGME at 5 kW daytime and nighttime will not result in exposure of workers or the general public to RF radiation in excess of levels specified in 47CFR 1.1310. Fences have been installed around all tower bases to comply with the minimum distance which exceeds the distances specified in OET Bulletin 65 for this frequency, calculated power levels in the towers and tower height to prevent electric and magnetic exposure greater than permissible levels. These fences limit access by the general public. If it becomes necessary for workers to enter the tower base areas for maintenance, the station will either reduce power or cease operation to provide RFR safety for the workers.

Item 8

Ground System Description

No changes were made to the ground system at KGME and remains as previously licensed:

Ground system consists of 120 copper radials 82.3m long equally spaced about each tower. Radials covered by crushed frock for first 7.6m and buried thereafter. Radials soldered to copper rings around tower bases which are brazed by copper straps to copper aprons over tower bases. Copper straps at points of radial intersections and along line of towers.