

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.

SECTION I - APPLICANT FEE INFORMATION													
1. PAYOR NAME (Last, First, Middle Initial) <div style="text-align: center;">Five Forty Broadcasting Company, LLC</div>													
MAILING ADDRESS (Line 1) (Maximum 35 characters) P.O. Box 1044													
MAILING ADDRESS (Line 2) (Maximum 35 characters)													
CITY Sylva		STATE OR COUNTRY (if foreign address) NC	ZIP CODE 28779										
TELEPHONE NUMBER (include area code) (828)586-2221		CALL LETTERS WRGC	OTHER FCC IDENTIFIER (If applicable) 73286										
2. A. Is a fee submitted with this application?			<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No										
B. If No, indicate reason for fee exemption (see 47 C.F.R. Section													
<input type="checkbox"/> Governmental Entity <input type="checkbox"/> Noncommercial educational licensee <input type="checkbox"/> 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)	(B)	(C)											
FEE TYPE CODE	FEE MULTIPLE	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY										
<table border="1" style="width: 100%;"><tr><td style="height: 20px;"></td><td style="height: 20px;"></td><td style="height: 20px;"></td></tr></table>				<table border="1" style="width: 100%;"><tr><td style="height: 20px;">0</td><td style="height: 20px;">0</td><td style="height: 20px;">0</td><td style="height: 20px;">1</td></tr></table>	0	0	0	1	<table border="1" style="width: 100%;"><tr><td style="height: 20px;">\$</td></tr></table>	\$	<table border="1" style="width: 100%;"><tr><td style="height: 20px;"></td></tr></table>		
0	0	0	1										
\$													
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)											
<table border="1" style="width: 100%;"><tr><td style="height: 20px;"></td><td style="height: 20px;"></td><td style="height: 20px;"></td></tr></table>				<table border="1" style="width: 100%;"><tr><td style="height: 20px;">0</td><td style="height: 20px;">0</td><td style="height: 20px;">0</td><td style="height: 20px;">1</td></tr></table>	0	0	0	1	<table border="1" style="width: 100%;"><tr><td style="height: 20px;">\$</td></tr></table>	\$	<table border="1" style="width: 100%;"><tr><td style="height: 20px;">FOR FCC USE ONLY</td></tr><tr><td style="height: 20px;"></td></tr></table>	FOR FCC USE ONLY	
0	0	0	1										
\$													
FOR FCC USE ONLY													
ADD ALL AMOUNTS SHOWN IN COLUMN C, AND ENTER THE TOTAL HERE. THIS AMOUNT SHOULD EQUAL YOUR ENCLOSED REMITTANCE.		<table border="1" style="width: 100%;"><tr><td style="text-align: center;">TOTAL AMOUNT REMITTED WITH THIS APPLICATION</td></tr><tr><td style="height: 20px;">\$</td></tr></table>	TOTAL AMOUNT REMITTED WITH THIS APPLICATION	\$	<table border="1" style="width: 100%;"><tr><td style="height: 20px;">FOR FCC USE ONLY</td></tr><tr><td style="height: 20px;"></td></tr></table>	FOR FCC USE ONLY							
TOTAL AMOUNT REMITTED WITH THIS APPLICATION													
\$													
FOR FCC USE ONLY													

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Five Forty Broadcasting Company, LLC		
MAILING ADDRESS P.O. Box 1044		
CITY Sylva	STATE NC	ZIP CODE 28779

2. This application is for:

- ☒ Commercial
 ☐ Noncommercial
☐ AM Directional
 ☒ AM Non-Directional

Call letters WRGC	Community of License Sylva, NC	Construction Permit File No. BP-20190130ABH	Modification of Construction Permit File No(s).	Expiration Date of Last Construction Permit 03/29/2022
----------------------	-----------------------------------	--	---	---

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 <i>ROY W BURNETTE</i>	Signature <i>Roy W Burnette</i>	
Title <i>MANAGING MEMBER</i>	Date <i>05-19-2021</i>	Telephone Number <i>828-586-2221</i>

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

FIVE FORTY BROADCASTING COMPANY, LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)



Station License



Direct Measurement of Power

1. Facilities authorized in construction permit					
Call Sign WRGE	File No. of Construction Permit (if applicable)	Frequency (kHz) 540	Hours of Operation UNLIMIT	Power in kilowatts	
				Night 190W	Day 5KW
2. Station location					
State NORTH CAROLINA			City or Town SYLVIA		
3. Transmitter location					
State NC	County JACKSON	City or Town SYLVIA	Street address (or other identification) 930 RUFUS ROBINSON RD		
4. Main studio location					
State NC	County JACKSON	City or Town SYLVIA	Street address (or other identification) 31 CITRUS DR		
5. Remote control point location (specify only if authorized directional antenna)					
State	County	City or Town	Street address (or other identification)		

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 5.25 AMPS				RF common point or antenna current (in amperes) without modulation for day system 24.3 AMPS			
Measured antenna or common point resistance (in ohms) at operating frequency Night 11 Ω Day 11 OHM				Measured antenna or common point reactance (in ohms) at operating frequency Night 11 OHM Day 11 OHM			
Antenna indications for directional operation							
Towers N/A	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents		
	Night	Day	Night	Day	Night	Day	
Manufacturer and type of antenna monitor:							

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 52R1ES FED	Overall height in meters of radiator above base insulator, or above base, if grounded. 59.74	Overall height in meters above ground (without obstruction lighting) 60.6	Overall height in meters above ground (include obstruction lighting) 60.6	If antenna is either top loaded or sectionalized, describe fully in an Exhibit. <div>Exhibit No. 13</div>
--	--	---	---	---

Excitation ☒ Series ☐ Shunt

AS PER MATTHEW FOLKERT FCC FORM 301
See Appendix A from Form 301, attached hereto.

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

North Latitude 35° 23' 31"	West Longitude 83° 14' 56"
--------------------------------------	--------------------------------------

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.

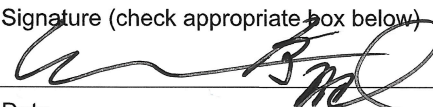
10. In what respect, if any, does the apparatus constructed differ from that described in the application for construction permit or in the permit?

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) WILLIAM BOYD	Signature (check appropriate box below) 
Address (include ZIP Code) 162 ARCO ROAD ASHEVILLE N.C. 28805	Date 05-19-2021
	Telephone No. (Include Area Code) 828-273-8371

☐ Technical Director

☐ Registered Professional Engineer

☒ Chief Operator

☐ Technical Consultant

☐ Other (specify)

WRGC TOWER TOP LOADING DESIGN AND CURRENT DISTRIBUTION ANALYSIS

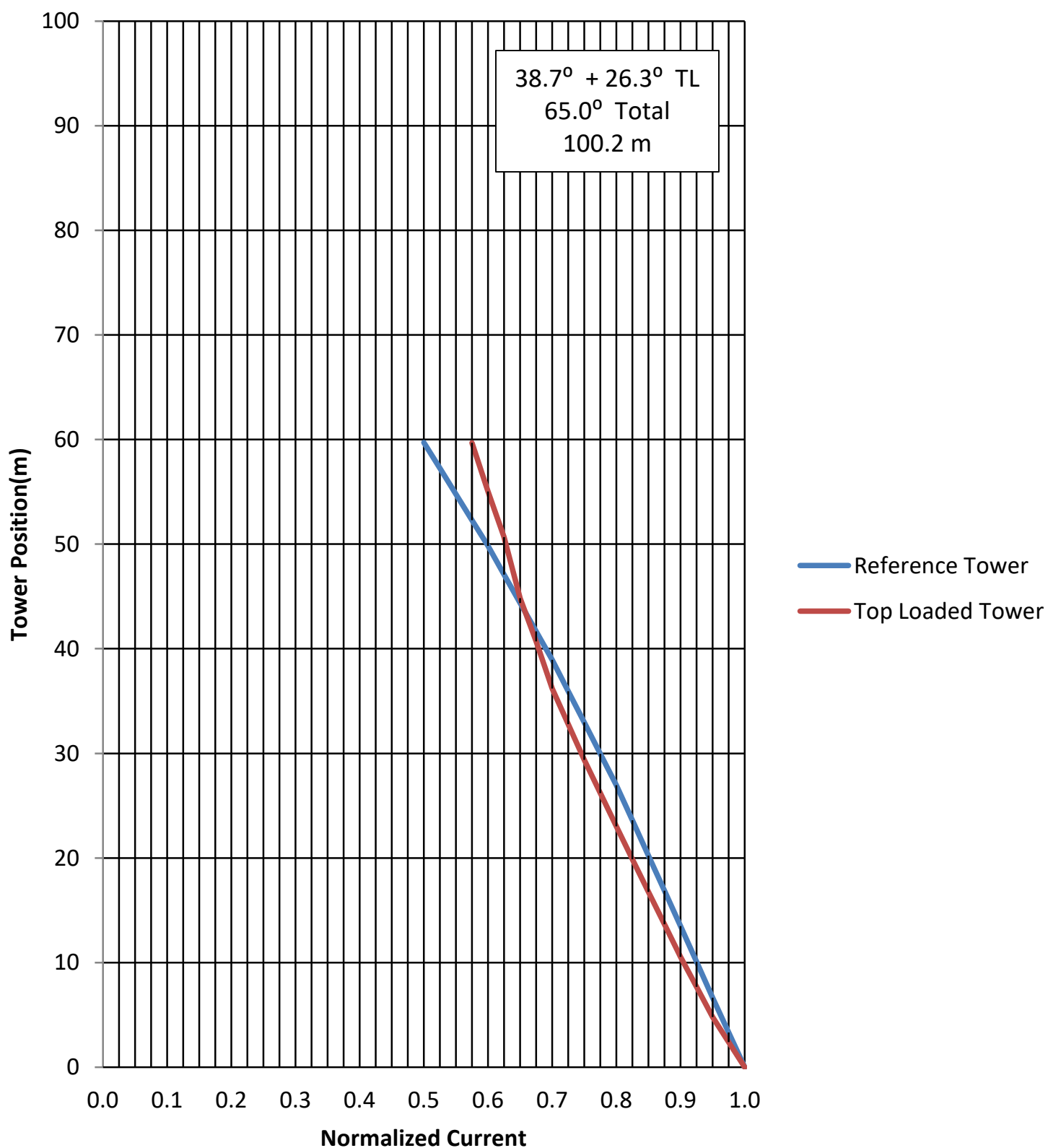
Moment method modeling, which calculates tower current distribution rather than assuming it to have a sinusoidal characteristic, was used to design the top loading scheme for the proposed tower. It represents the state-of-the-art for calculating both tower current distribution and radiation characteristics in cases such as this. Modern research and experience indicate that moment method modeled current should match “real world” conditions more closely than the sinusoidal assumption that the FCC has used for analyzing current distribution measurements when new top-loaded antennas have been licensed in the past. The MININEC Broadcast Professional software package that is commonly used for proofing AM directional antennas in FCC applications for license was used to evaluate the top loading design. The details of the model are provided herein.

The three 3/8 inch EHS guy wire sections connected to each tower top will extend 20.0 meters (65.6 feet) to insulators and their lower ends will be connected together with horizontal 3/8 inch EHS wire sections. The guy wires that are connected to each tower top will descend at an angle of 33.7 degrees from the vertical tower axis, corresponding to a horizontal plane guy anchor radius of 2/3 of the tower height.

The top loading analysis of the proposed WRGC tower was performed using the current distribution of a tower with a total electrical height of $39.3 + 25.7 = 65.0$ electrical degrees (100.2 meters at 540 kilohertz) as a reference. The physical characteristics of the top loading wire sections connected to the top of the tower were selected to provide a match between the predicted current distribution along the proposed 39.3 degree (60.6 meters at 540 kilohertz) top loaded tower with that of the lower 39.3 degree portion of the reference 65.0 electrical degree tower. Current distributions for both the reference and top-loaded models are plotted on the graph that is shown on sheet 2. The currents were calculated assuming antenna input power levels that produce 10.0 amperes at ground level for both cases, to make their current distribution characteristics directly comparable. Their shapes when scaled together are essentially the same over the comparable span of height, as the top loaded antenna curve has essentially equal deviations inside and outside the reference antenna curve within that span.

The model used a conductor with the equivalent radius of a triangular tower having a face width of 18.0 inches to represent the proposed WRGC tower. The top loading wires have the radius of the 3/8 inch EHS guy cable from which they will be constructed. Details of the modeled geometry of the reference tower are shown on sheet 3 and a list of the modeled current nodes is shown on sheet 4. Details of the modeled geometry of the proposed top loaded tower are shown on sheet 5 and the modeled current nodes are shown on sheet 6.

CALCULATED CURRENT DISTRIBUTION



C:\MBPRO\WRGCREF 01-14-2019 16:52:48

GEOMETRY

Dimensions in meters

Environment: PERFECT GROUND

wire	caps	X	Y	Z	radius	segs
1	none	0	0	0	.22	10
		0	0	100.2		

Number of wires = 1
current nodes = 10

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	1	10.02	1	10.02
segment/radius ratio	1	45.54545	1	45.54545
radius	1	.22	1	.22

ELECTRICAL DESCRIPTION

Frequencies (MHz)

frequency			no. of steps	segment length (wavelengths)	
no.	lowest	step		minimum	maximum
1	.54	0	1	.01804803	.01804803

Sources

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

C:\MBPRO\WRGCREF 01-14-2019 16:46:48

CURRENT - RMS

Frequency = .54 MHz

Input power = 1562. watts

Efficiency = 100. %

wire	node	X	Y	Z	magnitude (amps)	phase (deg)
1	GND	0	0	0	9.9993	83.23
1	2	0	0	10.02	9.247618	82.75
1	3	0	0	20.04	8.5391	82.39
1	4	0	0	30.06	7.764433	82.08
1	5	0	0	40.08	6.909836	81.79
1	6	0	0	50.1	5.974167	81.52
1	7	0	0	60.12	4.96026	81.27
1	8	0	0	70.14	3.871578	81.04
1	9	0	0	80.16	2.708459	80.81
1	10	0	0	90.17999	1.459057	80.59
1	END	0	0	100.2	0	0

C:\MBPRO\WRGCTL 01-17-2019 15:05:47

GEOMETRY

Dimensions in meters

Environment: PERFECT GROUND

wire	caps	X	Y	Z	radius	segs
1	none	0	0	0	.22	10
		0	0	59.7		
2	none	0	0	59.7	.0048	3
		-5.56	9.62	43.1		
3	none	0	0	59.7	.0048	3
		-5.56	-9.62	43.1		
4	none	0	0	59.7	.0048	3
		11.1	0	43.1		
5	none	-5.56	9.62	43.1	.0048	3
		-5.56	-9.62	43.1		
6	none	-5.56	-9.62	43.1	.0048	3
		11.1	0	43.1		
7	none	11.1	0	43.1	.0048	3
		-5.56	9.62	43.1		

Number of wires = 7
current nodes = 31

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	1	5.97	2	6.658479
segment/radius ratio	1	27.13637	2	1387.183
radius	2	.0048	1	.22

ELECTRICAL DESCRIPTION

Frequencies (MHz)

frequency			no. of segment length (wavelengths)		
no.	lowest	step	steps	minimum	maximum
1	.54	0	1	.01075317	.01199326

Sources

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

C:\MBPRO\WRGCTL 01-17-2019 15:08:45

CURRENT - RMS

Frequency = .54 MHz

Input power = 736.8681 watts

Efficiency = 100. %

wire	node	X	Y	Z	magnitude (amps)	phase (deg)
1	GND	0	0	0	10.	87.48
1	2	0	0	5.97	9.378178	87.32
1	3	0	0	11.94	8.884776	87.21
1	4	0	0	17.91	8.406897	87.12
1	5	0	0	23.88	7.931492	87.03
1	6	0	0	29.85	7.463535	86.97
1	7	0	0	35.82	7.02792	86.92
1	8	0	0	41.79	6.688253	86.89
1	9	0	0	47.76	6.417396	86.88
1	10	0	0	53.73	6.075168	86.89
1	J1	0	0	59.7	5.732981	86.92
2	2J1	0	0	59.7	1.910798	86.92
2	12	-1.853333	3.206667	54.16667	1.626943	87.
2	13	-3.706667	6.413333	48.63333	1.283574	87.09
2	J2	-5.56	9.62	43.1	.9398399	87.13
3	2J1	0	0	59.7	1.910798	86.92
3	15	-1.853333	-3.206667	54.16667	1.626936	87.
3	16	-3.706667	-6.413333	48.63333	1.283567	87.09
3	J3	-5.56	-9.62	43.1	.9398316	87.13
4	2J1	0	0	59.7	1.911385	86.92
4	18	3.7	0	54.16667	1.627721	87.
4	19	7.400001	0	48.63333	1.284537	87.09
4	J4	11.1	0	43.1	.9409668	87.13
5	2J2	-5.56	9.62	43.1	.4702679	87.13
5	21	-5.56	3.206667	43.1	.1542613	87.12
5	22	-5.56	-3.206667	43.1	.1541742	267.12
5	1J3	-5.56	-9.62	43.1	.470179	267.13
6	2J3	-5.56	-9.62	43.1	.4696525	87.13
6	25	-.00666649	-6.413333	43.1	.1537216	87.12
6	26	5.546667	-3.206667	43.1	.154555	267.12
6	1J4	11.1	0	43.1	.4704423	267.13
7	2J4	11.1	0	43.1	.4705245	87.13
7	29	5.546667	3.206667	43.1	.1546371	87.12
7	30	-.00666651	6.413333	43.1	.1536404	267.12
7	1J2	-5.56	9.62	43.1	.4695721	267.13