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)

Good Karma Broadcasting, L.L.C.

MAILING ADDRESS (Line 1) (Maximum 35 characters)
301 W. Wisconsin Avenue, Suite 200

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
Milwaukee	WI	53203

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
(414) 209-3100	KSPN	33255

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
	0001	$	

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

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

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

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Good Karma Broadcasting, L.L.C.		
MAILING ADDRESS 301 W. Wisconsin Avenue, Suite 200		
CITY Milwaukee	STATE WI	ZIP CODE 33255

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
KSPN	Los Angeles, CA	BP-20200914AAV		01/05/2024

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	
Craig Karmazin	/S/	
Title	Date	Telephone Number
President	10/12/2022	(414) 209-3100

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
Good Karma Broadcasting, 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
KSPN	BP-20200914AAV	710	Unlimited	2.5	34.0

2. Station location

State	City or Town
California	Pasadena

3. Transmitter location

State	County	City or Town	Street address (or other identification)
CA	Los Angeles	Irwindale	277 Longden Avenue

4. Main studio location

State	County	City or Town	Street address (or other identification)
CA	Los Angeles	Burbank	800 W Olympic Blvd., Ste A

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

State	County	City or Town	Street address (or other identification)
CA	Los Angeles	Burbank	800 W Olympic Blvd., Ste. A

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. Eng. Sttmt

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
7.35	26.76

Measured antenna or common point resistance (in ohms) at operating frequency		Measured antenna or common point reactance (in ohms) at operating frequency	
Night	Day	Night	Day
50.0	50.0	-j3.0	-j3.0

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 (1012886)	0.0	+97.3	1.000	0.483		
2 (1012888)	+129.1	0.0	0.513	1.000		
3 (1012885)	+150.6		0.567			
4 (1012884)		+124.0		1.041		

Manufacturer and type of antenna monitor: Potomac Instruments Model 1901-4, Serial No. 985

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.
steel, uniform cross-section, guyed	99.0 (All)	99.6 (All)	100.5 (All)	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	34 °	06 '	50 "	West Longitude	117 °	59 '	51 "

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. Eng. Sttmt

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

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

None

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

No Change

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 below)
Carl T. Jones, Jr.	
Address (include ZIP Code)	Date
Carl T. Jones Corporation 7901 Yarnwood Court Springfield, VA 22153	July 26, 2022
	Telephone No. (Include Area Code) (703) 569-7704

☐ Technical Director

☑ Registered Professional Engineer

☐ Chief Operator

☐ Technical Consultant

☐ Other (specify)

APPENDIX A

INDIVIDUAL TOWER MODELS

IMPEDANCE - TOWER #1
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 25, sector 1							
.71	41.555	19.772	46.019	25.4	1.5959	-12.783	-.23508

GEOMETRY - TOWER #1
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.56		
2	none	57.6	60.	0	.4075	24
		57.6	60.	89.89		
3	none	115.1	60.	0	.4075	24
		115.1	60.	90.14		
4	none	172.7	60.	0	.2911	24
		172.7	60.	88.62		
5	none	105.5	14.	0	.3057	24
		105.5	14.	90.31		

Number of wires = 5
current nodes = 120

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	4	3.6925	1	3.77333
radius	4	.2911	1	.4075

ELECTRICAL DESCRIPTION - TOWER #1
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.71	0	1	.010257	.0104815

Sources

source	node	sector	magnitude	phase	type
1	25	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.165	0	0
2	25	1.E-03	0	0	0	0
3	49	1.E-03	0	.1672	0	0
4	73	1.E-03	0	.1696	0	0
5	97	1.E-03	0	.1651	0	0

IMPEDANCE - TOWER #2
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 97, sector 1							
.71	41.132	23.134	47.191	29.4	1.7156	-11.584	-.31255

GEOMETRY - TOWER #2
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.56		
2	none	57.6	60.	0	.4075	24
		57.6	60.	89.89		
3	none	115.1	60.	0	.4075	24
		115.1	60.	90.14		
4	none	172.7	60.	0	.2911	24
		172.7	60.	88.62		
5	none	105.5	14.	0	.3057	24
		105.5	14.	90.31		

Number of wires = 5
current nodes = 120

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	4	3.6925	1	3.77333
radius	4	.2911	1	.4075

ELECTRICAL DESCRIPTION - TOWER #2
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	.71	0	1	.010257	.0104815

Sources

source	node	sector	magnitude	phase	type
1	97	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.165	0	0
2	25	1.E-03	0	.1663	0	0
3	49	1.E-03	0	.1672	0	0
4	73	1.E-03	0	.1696	0	0
5	97	1.E-03	0	0	0	0

IMPEDANCE - TOWER #3
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 49, sector 1							
.71	41.904	21.47	47.084	27.1	1.6425	-12.283	-.26461

GEOMETRY - TOWER #3
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.56		
2	none	57.6	60.	0	.4075	24
		57.6	60.	89.89		
3	none	115.1	60.	0	.4075	24
		115.1	60.	90.14		
4	none	172.7	60.	0	.2911	24
		172.7	60.	88.62		
5	none	105.5	14.	0	.3057	24
		105.5	14.	90.31		

Number of wires = 5
current nodes = 120

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	4	3.6925	1	3.77333
radius	4	.2911	1	.4075

ELECTRICAL DESCRIPTION - TOWER #3
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	.71	0	1	.010257	.0104815

Sources

source	node	sector	magnitude	phase	type
1	49	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.165	0	0
2	25	1.E-03	0	.1663	0	0
3	49	1.E-03	0	0	0	0
4	73	1.E-03	0	.1696	0	0
5	97	1.E-03	0	.1651	0	0

IMPEDANCE - TOWER #4
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 73, sector 1							
.71	39.312	13.685	41.626	19.2	1.4758	-14.326	-.16343

GEOMETRY - TOWER #4
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.56		
2	none	57.6	60.	0	.4075	24
		57.6	60.	89.89		
3	none	115.1	60.	0	.4075	24
		115.1	60.	90.14		
4	none	172.7	60.	0	.2911	24
		172.7	60.	88.62		
5	none	105.5	14.	0	.3057	24
		105.5	14.	90.31		

Number of wires = 5
current nodes = 120

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	4	3.6925	1	3.77333
radius	4	.2911	1	.4075

ELECTRICAL DESCRIPTION - TOWER #4
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.71	0	1	.010257	.0104815

Sources

source	node	sector	magnitude	phase	type
1	73	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.165	0	0
2	25	1.E-03	0	.1663	0	0
3	49	1.E-03	0	.1672	0	0
4	73	1.E-03	0	0	0	0
5	97	1.E-03	0	.1651	0	0

IMPEDANCE - TOWER #5
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
.71	42.769	24.394	49.237	29.7	1.722	-11.527	-.31683

GEOMETRY - TOWER #5
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.56		
2	none	57.6	60.	0	.4075	24
		57.6	60.	89.89		
3	none	115.1	60.	0	.4075	24
		115.1	60.	90.14		
4	none	172.7	60.	0	.2911	24
		172.7	60.	88.62		
5	none	105.5	14.	0	.3057	24
		105.5	14.	90.31		

Number of wires = 5
current nodes = 120

	minimum wire	minimum value	maximum wire	maximum value
Individual wires				
segment length	4	3.6925	1	3.77333
radius	4	.2911	1	.4075

ELECTRICAL DESCRIPTION - TOWER #5
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.71	0	1	.010257	.0104815

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	1	1.E-03	0	0	0	0
2	25	1.E-03	0	.1663	0	0
3	49	1.E-03	0	.1672	0	0
4	73	1.E-03	0	.1696	0	0
5	97	1.E-03	0	.1651	0	0

APPENDIX B

DAYTIME DIRECTIONAL MODEL

Consulting Engineers
CTJC
CARL T. JONES CORPORATION

IMPEDANCE - DAYTIME OPERATION
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 25, sector 1							
.71	43.082	-52.128	67.627	309.6	2.944	-6.1448	-1.2088
source = 2; node 73, sector 1							
.71	18.579	8.6524	20.495	25.	2.7842	-6.5306	-1.0919
source = 3; node 97, sector 1							
.71	65.707	56.587	86.716	40.7	2.6761	-6.8218	-1.0121

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.56		
2	none	57.6	60.	0	.4075	24
		57.6	60.	89.89		
3	none	115.1	60.	0	.4075	24
		115.1	60.	90.14		
4	none	172.7	60.	0	.2911	24
		172.7	60.	88.62		
5	none	105.5	14.	0	.3057	24
		105.5	14.	90.31		

Number of wires = 5
current nodes = 120

	minimum wire	minimum value	maximum wire	maximum value
Individual wires				
segment length	4	3.6925	1	3.77333
radius	4	.2911	1	.4075

ELECTRICAL DESCRIPTION - DAYTIME OPERATION
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.71	0	1	.010257	.0104815

Sources

source	node	sector	magnitude	phase	type
1	25	1	976.92	314.9	voltage
2	73	1	587.682	54.9	voltage
3	97	1	2,237.17	310.	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.109	0	0
2	25	1.E-03	0	0	0	0
3	49	1.E-03	0	.109	0	0
4	73	1.E-03	0	0	0	0
5	97	1.E-03	0	0	0	0

RMS CURRENT - DAYTIME OPERATION
Frequency = .71 MHz
Input power = 34,000. watts
Efficiency = 100. %

coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	1.41018	357.8	1.4091	-.0550519
2	0	0	3.77333	1.06108	357.8	1.06028	-.0413726
3	0	0	7.54667	.850059	357.8	.849418	-.0329858
4	0	0	11.32	.671106	357.8	.670612	-.0257621
5	0	0	15.0933	.514111	357.8	.513748	-.0193208
6	0	0	18.8667	.37436	357.9	.374116	-.0134955
7	0	0	22.64	.249573	358.1	.249437	-8.22E-03
8	0	0	26.4133	.138475	358.6	.138432	-3.46E-03
9	0	0	30.1867	.0403229	1.1	.0403152	7.87E-04
10	0	0	33.96	.0456643	174.3	-.0454396	4.52E-03
11	0	0	37.7333	.119468	176.3	-.119217	7.75E-03
12	0	0	41.5067	.181622	176.7	-.18132	.0104538
13	0	0	45.28	.232361	176.9	-.232016	.0126435
14	0	0	49.0533	.271926	177.	-.271549	.0143185
15	0	0	52.8267	.300552	177.	-.300152	.0154847
16	0	0	56.6	.318472	177.1	-.318062	.0161513
17	0	0	60.3733	.325917	177.1	-.325507	.0163302
18	0	0	64.1467	.323109	177.2	-.322711	.0160347
19	0	0	67.92	.310249	177.2	-.309872	.0152784
20	0	0	71.6933	.287489	177.2	-.287145	.0140721
21	0	0	75.4667	.25489	177.2	-.254587	.012421
22	0	0	79.24	.212318	177.2	-.212068	.010318
23	0	0	83.0133	.159193	177.2	-.159006	7.73E-03
24	0	0	86.7867	.0939399	177.2	-.0938288	4.57E-03
END	0	0	90.56	0	0	0	0
GND	28.8	-49.8831	0	10.2146	5.3	10.1707	.946851
26	28.8	-49.8831	3.74542	9.92916	4.	9.90451	.699297
27	28.8	-49.8831	7.49083	9.71646	3.2	9.70093	.549146
28	28.8	-49.8831	11.2363	9.49376	2.5	9.48442	.421076
29	28.8	-49.8831	14.9817	9.2533	1.9	9.24817	.307973
30	28.8	-49.8831	18.7271	8.99153	1.3	8.98916	.206549
31	28.8	-49.8831	22.4725	8.70715	.8	8.70639	.115257
32	28.8	-49.8831	26.2179	8.39957	.2	8.3995	.0332814
33	28.8	-49.8831	29.9633	8.06896	359.7	8.06886	-.039825
34	28.8	-49.8831	33.7088	7.71552	359.2	7.71481	-.104307
35	28.8	-49.8831	37.4542	7.33996	358.7	7.33821	-.16029
36	28.8	-49.8831	41.1996	6.943	358.3	6.93989	-.207824
37	28.8	-49.8831	44.945	6.52546	357.8	6.52079	-.246912
38	28.8	-49.8831	48.6904	6.08831	357.4	6.08198	-.277527
39	28.8	-49.8831	52.4358	5.63255	357.	5.62458	-.29962
40	28.8	-49.8831	56.1813	5.1592	356.5	5.14969	-.313129
41	28.8	-49.8831	59.9267	4.66924	356.1	4.6584	-.317979
42	28.8	-49.8831	63.6721	4.16357	355.7	4.1517	-.314075
43	28.8	-49.8831	67.4175	3.64286	355.3	3.63038	-.301306
44	28.8	-49.8831	71.1629	3.10747	354.8	3.09488	-.279509
45	28.8	-49.8831	74.9083	2.55704	354.4	2.54495	-.248445
46	28.8	-49.8831	78.6538	1.98989	354.	1.97902	-.20769
47	28.8	-49.8831	82.3992	1.40118	353.6	1.39243	-.1564
48	28.8	-49.8831	86.1446	.779179	353.2	.773638	-.0927631
END	28.8	-49.8831	89.89	0	0	0	0
GND	57.55	-99.6795	0	1.27081	65.6	.525262	1.15717
50	57.55	-99.6795	3.75583	.957204	65.5	.396383	.871275
51	57.55	-99.6795	7.51167	.768377	65.3	.320541	.698324
52	57.55	-99.6795	11.2675	.608811	64.9	.2582	.551348
53	57.55	-99.6795	15.0233	.469461	64.	.20551	.422089
54	57.55	-99.6795	18.7792	.346191	62.4	.160583	.306695
55	57.55	-99.6795	22.535	.237315	59.	.122399	.203315
56	57.55	-99.6795	26.2908	.143019	50.9	.090277	.110926
57	57.55	-99.6795	30.0467	.0699396	24.4	.0636827	.0289147
58	57.55	-99.6795	33.8025	.0602904	314.4	.0421471	-.0431109

59	57.55	-99.6795	37.5583	.108395	283.5	.0252233	-.105419
60	57.55	-99.6795	41.3142	.158697	274.5	.0124642	-.158207
61	57.55	-99.6795	45.07	.201656	271.	3.41E-03	-.201627
62	57.55	-99.6795	48.8258	.235824	269.4	-2.41E-03	-.235812
63	57.55	-99.6795	52.5817	.260937	268.8	-5.48E-03	-.26088
64	57.55	-99.6795	56.3375	.277013	268.7	-6.33E-03	-.27694
65	57.55	-99.6795	60.0933	.284148	268.9	-5.46E-03	-.284096
66	57.55	-99.6795	63.8492	.282458	269.3	-3.4E-03	-.282438
67	57.55	-99.6795	67.605	.272037	269.9	-6.77E-04	-.272036
68	57.55	-99.6795	71.3608	.252925	270.5	2.18E-03	-.252916
69	57.55	-99.6795	75.1167	.225067	271.2	4.68E-03	-.225018
70	57.55	-99.6795	78.8725	.188221	271.9	6.31E-03	-.188115
71	57.55	-99.6795	82.6283	.141729	272.7	6.6E-03	-.141575
72	57.55	-99.6795	86.3842	.0840301	273.4	5.04E-03	-.0838791
END	57.55	-99.6795	90.14	0	0	0	0
GND	86.35	-149.563	0	20.2759	29.9	17.5765	10.1083
74	86.35	-149.563	3.6925	20.3124	29.4	17.6883	9.98575
75	86.35	-149.563	7.385	20.2419	29.2	17.6767	9.86243
76	86.35	-149.563	11.0775	20.0847	28.9	17.5809	9.71118
77	86.35	-149.563	14.77	19.8437	28.7	17.406	9.52918
78	86.35	-149.563	18.4625	19.5208	28.5	17.1547	9.31556
79	86.35	-149.563	22.155	19.1176	28.3	16.8289	9.07019
80	86.35	-149.563	25.8475	18.6356	28.2	16.4305	8.79343
81	86.35	-149.563	29.54	18.0767	28.	15.9611	8.48591
82	86.35	-149.563	33.2325	17.4429	27.8	15.4227	8.14841
83	86.35	-149.563	36.925	16.7364	27.7	14.8171	7.78192
84	86.35	-149.563	40.6175	15.9593	27.6	14.1466	7.38742
85	86.35	-149.563	44.31	15.1143	27.4	13.4132	6.96612
86	86.35	-149.563	48.0025	14.2038	27.3	12.6194	6.51923
87	86.35	-149.563	51.695	13.2306	27.2	11.7674	6.04801
88	86.35	-149.563	55.3875	12.1973	27.1	10.8595	5.55373
89	86.35	-149.563	59.08	11.1063	27.	9.89814	5.0376
90	86.35	-149.563	62.7725	9.96018	26.9	8.88528	4.50076
91	86.35	-149.563	66.465	8.76064	26.8	7.82258	3.94412
92	86.35	-149.563	70.1575	7.50866	26.7	6.71082	3.36822
93	86.35	-149.563	73.85	6.20372	26.5	5.54953	2.77289
94	86.35	-149.563	77.5425	4.84199	26.4	4.33522	2.15655
95	86.35	-149.563	81.235	3.41234	26.3	3.05787	1.51445
96	86.35	-149.563	84.9275	1.88516	26.2	1.6908	.833664
END	86.35	-149.563	88.62	0	0	0	0
GND	102.366	-25.5227	0	18.2425	269.2	-.247119	-18.2409
98	102.366	-25.5227	3.76292	18.6719	267.6	-.784259	-18.6554
99	102.366	-25.5227	7.52583	18.8603	266.6	-1.11611	-18.8272
100	102.366	-25.5227	11.2888	18.9287	265.8	-1.38747	-18.8778
101	102.366	-25.5227	15.0517	18.8908	265.1	-1.6148	-18.8216
102	102.366	-25.5227	18.8146	18.7527	264.5	-1.80528	-18.6656
103	102.366	-25.5227	22.5775	18.5182	263.9	-1.96243	-18.4139
104	102.366	-25.5227	26.3404	18.1897	263.4	-2.08825	-18.0694
105	102.366	-25.5227	30.1033	17.7695	262.9	-2.18405	-17.6348
106	102.366	-25.5227	33.8663	17.2601	262.5	-2.25068	-17.1127
107	102.366	-25.5227	37.6292	16.6635	262.1	-2.28887	-16.5056
108	102.366	-25.5227	41.3921	15.9822	261.7	-2.29921	-15.816
109	102.366	-25.5227	45.155	15.2189	261.4	-2.28221	-15.0468
110	102.366	-25.5227	48.9179	14.3761	261.	-2.23844	-14.2007
111	102.366	-25.5227	52.6808	13.4567	260.7	-2.16839	-13.2808
112	102.366	-25.5227	56.4438	12.4633	260.4	-2.0726	-12.2898
113	102.366	-25.5227	60.2067	11.3989	260.1	-1.95155	-11.2306
114	102.366	-25.5227	63.9696	10.2658	259.9	-1.80571	-10.1058
115	102.366	-25.5227	67.7325	9.06605	259.6	-1.63545	-8.91732
116	102.366	-25.5227	71.4954	7.80076	259.4	-1.44096	-7.66652
117	102.366	-25.5227	75.2583	6.46951	259.1	-1.22206	-6.35304
118	102.366	-25.5227	79.0213	5.06826	258.9	-.9779	-4.97303
119	102.366	-25.5227	82.7842	3.5853	258.6	-.705938	-3.51511

120	102.366	-25.5227	86.5471	1.98926	258.4	-.399494	-1.94874
END	102.366	-25.5227	90.31	0	0	0	0

APPENDIX C

NIGHTTIME DIRECTIONAL MODEL

IMPEDANCE - NIGHTTIME OPERATION
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 25, sector 1							
.71	26.082	51.223	57.481	63.	4.2133	-4.2032	-2.0754
source = 2; node 49, sector 1							
.71	-.85364	-15.108	15.132	266.8	****	****	****
source = 3; node 97, sector 1							
.71	16.88	-5.8098	17.852	341.	3.0071	-6.0052	-1.2545

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.56		
2	none	57.6	60.	0	.4075	24
		57.6	60.	89.89		
3	none	115.1	60.	0	.4075	24
		115.1	60.	90.14		
4	none	172.7	60.	0	.2911	24
		172.7	60.	88.62		
5	none	105.5	14.	0	.3057	24
		105.5	14.	90.31		

Number of wires = 5
current nodes = 120

	minimum wire	minimum value	maximum wire	maximum value
Individual wires				
segment length	4	3.6925	1	3.77333
radius	4	.2911	1	.4075

ELECTRICAL DESCRIPTION - NIGHTTIME OPERATION
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.71	0	1	.010257	.0104815

Sources

source	node	sector	magnitude	phase	type
1	25	1	731.015	65.6	voltage
2	49	1	119.185	57.9	voltage
3	97	1	125.527	112.1	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.109	0	0
2	25	1.E-03	0	0	0	0
3	49	1.E-03	0	0	0	0
4	73	1.E-03	0	.122	0	0
5	97	1.E-03	0	0	0	0

RMS CURRENT - NIGHTTIME OPERATION
Frequency = .71 MHz
Input power = 2,500. watts
Efficiency = 99.99 %

coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	.764081	122.3	-.408216	.645894
2	0	0	3.77333	.574649	122.3	-.306848	.485866
3	0	0	7.54667	.459472	122.2	-.244829	.38881
4	0	0	11.32	.361132	122.	-.191489	.306184
5	0	0	15.0933	.274186	121.7	-.14393	.233371
6	0	0	18.8667	.196136	120.9	-.100828	.168235
7	0	0	22.64	.125846	119.3	-.0615737	.109754
8	0	0	26.4133	.0629384	114.3	-.0258655	.0573779
9	0	0	30.1867	.0125614	59.1	6.44E-03	.0107831
10	0	0	33.96	.0465558	319.5	.035408	-.0302278
11	0	0	37.7333	.0897317	312.9	.0610285	-.0657822
12	0	0	41.5067	.127054	310.9	.0832661	-.0959664
13	0	0	45.28	.158172	310.2	.102054	-.120844
14	0	0	49.0533	.183005	309.9	.117306	-.140463
15	0	0	52.8267	.201505	309.8	.12892	-.154866
16	0	0	56.6	.213623	309.8	.136781	-.164091
17	0	0	60.3733	.219304	309.9	.140762	-.168168
18	0	0	64.1467	.21848	310.1	.140724	-.167124
19	0	0	67.92	.211063	310.3	.136513	-.160972
20	0	0	71.6933	.196935	310.5	.127957	-.149701
21	0	0	75.4667	.175911	310.8	.114844	-.133249
22	0	0	79.24	.147678	311.	.0968814	-.111458
23	0	0	83.0133	.111616	311.2	.0735773	-.0839322
24	0	0	86.7867	.0664073	311.5	.0439849	-.049752
END	0	0	90.56	0	0	0	0
GND	28.8	-49.8831	0	8.99267	2.6	8.98344	.407334
26	28.8	-49.8831	3.74542	9.20758	1.9	9.20271	.299226
27	28.8	-49.8831	7.49083	9.29151	1.4	9.28856	.234286
28	28.8	-49.8831	11.2363	9.31567	1.1	9.31394	.179522
29	28.8	-49.8831	14.9817	9.28695	.8	9.28601	.131789
30	28.8	-49.8831	18.7271	9.20902	.6	9.20858	.089606
31	28.8	-49.8831	22.4725	9.08386	.3	9.08371	.0522421
32	28.8	-49.8831	26.2179	8.9131	.1	8.91308	.0192759
33	28.8	-49.8831	29.9633	8.69806	359.9	8.69805	-9.56E-03
34	28.8	-49.8831	33.7088	8.44003	359.8	8.43996	-.0344674
35	28.8	-49.8831	37.4542	8.14033	359.6	8.14014	-.0555843
36	28.8	-49.8831	41.1996	7.80023	359.5	7.79988	-.0730378
37	28.8	-49.8831	44.945	7.42117	359.3	7.42066	-.0869395
38	28.8	-49.8831	48.6904	7.00451	359.2	7.00383	-.0973919
39	28.8	-49.8831	52.4358	6.55177	359.1	6.55093	-.104496
40	28.8	-49.8831	56.1813	6.06438	359.	6.06341	-.108348
41	28.8	-49.8831	59.9267	5.54374	358.9	5.54266	-.109042
42	28.8	-49.8831	63.6721	4.9911	358.8	4.98996	-.106667
43	28.8	-49.8831	67.4175	4.40749	358.7	4.40633	-.101303
44	28.8	-49.8831	71.1629	3.79345	358.6	3.79231	-.0930107
45	28.8	-49.8831	74.9083	3.14864	358.5	3.14758	-.0818208
46	28.8	-49.8831	78.6538	2.471	358.4	2.47007	-.0676979
47	28.8	-49.8831	82.3992	1.75438	358.4	1.75365	-.0504649
48	28.8	-49.8831	86.1446	.983686	358.3	.983239	-.0296322
END	28.8	-49.8831	89.89	0	0	0	0
GND	57.55	-99.6795	0	5.56943	151.2	-4.87892	2.68602
50	57.55	-99.6795	3.75583	5.51596	151.2	-4.83315	2.65828
51	57.55	-99.6795	7.51167	5.45796	151.2	-4.78276	2.62953
52	57.55	-99.6795	11.2675	5.38254	151.2	-4.71683	2.5929
53	57.55	-99.6795	15.0233	5.28867	151.2	-4.63451	2.54783
54	57.55	-99.6795	18.7792	5.17606	151.2	-4.53553	2.49409
55	57.55	-99.6795	22.535	5.04477	151.2	-4.42001	2.4317
56	57.55	-99.6795	26.2908	4.89507	151.2	-4.2882	2.36073
57	57.55	-99.6795	30.0467	4.72738	151.1	-4.14049	2.28133
58	57.55	-99.6795	33.8025	4.54221	151.1	-3.97736	2.19369

59	57.55	-99.6795	37.5583	4.34017	151.1	-3.79937	2.09806
60	57.55	-99.6795	41.3142	4.12191	151.1	-3.60713	1.99469
61	57.55	-99.6795	45.07	3.88817	151.	-3.40132	1.88385
62	57.55	-99.6795	48.8258	3.63971	151.	-3.18265	1.76584
63	57.55	-99.6795	52.5817	3.37734	150.9	-2.95189	1.64098
64	57.55	-99.6795	56.3375	3.10189	150.9	-2.70978	1.50957
65	57.55	-99.6795	60.0933	2.81414	150.8	-2.45707	1.37193
66	57.55	-99.6795	63.8492	2.51483	150.8	-2.19445	1.22831
67	57.55	-99.6795	67.605	2.20459	150.7	-1.92253	1.07893
68	57.55	-99.6795	71.3608	1.8838	150.6	-1.6417	.923878
69	57.55	-99.6795	75.1167	1.55247	150.6	-1.352	.763067
70	57.55	-99.6795	78.8725	1.20973	150.5	-1.05273	.595986
71	57.55	-99.6795	82.6283	.852804	150.4	-.74155	.421163
72	57.55	-99.6795	86.3842	.474686	150.3	-.412418	.235028
END	57.55	-99.6795	90.14	0	0	0	0
GND	86.35	-149.563	0	.0774231	111.6	-.0284724	.0719976
74	86.35	-149.563	3.6925	.0593069	111.7	-.0218811	.0551229
75	86.35	-149.563	7.385	.0479876	111.9	-.0179293	.0445124
76	86.35	-149.563	11.0775	.0386441	112.6	-.0148377	.035682
77	86.35	-149.563	14.77	.0307142	113.8	-.0123885	.0281049
78	86.35	-149.563	18.4625	.0239548	115.9	-.0104744	.0215434
79	86.35	-149.563	22.155	.018259	119.6	-9.03E-03	.0158707
80	86.35	-149.563	25.8475	.0136035	126.	-8.E-03	.0110042
81	86.35	-149.563	29.54	.0100573	136.8	-7.33E-03	6.88E-03
82	86.35	-149.563	33.2325	7.8E-03	153.7	-6.99E-03	3.45E-03
83	86.35	-149.563	36.925	6.95E-03	174.6	-6.92E-03	6.6E-04
84	86.35	-149.563	40.6175	7.23E-03	192.3	-7.06E-03	-1.54E-03
85	86.35	-149.563	44.31	8.03E-03	203.4	-7.37E-03	-3.19E-03
86	86.35	-149.563	48.0025	8.92E-03	209.2	-7.79E-03	-4.35E-03
87	86.35	-149.563	51.695	9.69E-03	211.6	-8.26E-03	-5.07E-03
88	86.35	-149.563	55.3875	.0102482	211.8	-8.71E-03	-5.41E-03
89	86.35	-149.563	59.08	.0105661	210.8	-9.08E-03	-5.41E-03
90	86.35	-149.563	62.7725	.010625	208.9	-9.3E-03	-5.14E-03
91	86.35	-149.563	66.465	.0104054	206.5	-9.31E-03	-4.65E-03
92	86.35	-149.563	70.1575	9.88E-03	203.9	-9.03E-03	-4.E-03
93	86.35	-149.563	73.85	9.01E-03	201.1	-8.4E-03	-3.24E-03
94	86.35	-149.563	77.5425	7.73E-03	198.3	-7.34E-03	-2.42E-03
95	86.35	-149.563	81.235	5.98E-03	195.5	-5.76E-03	-1.6E-03
96	86.35	-149.563	84.9275	3.62E-03	192.9	-3.53E-03	-8.07E-04
END	86.35	-149.563	88.62	0	0	0	0
GND	102.366	-25.5227	0	4.97206	131.1	-3.27088	3.7447
98	102.366	-25.5227	3.76292	4.94958	130.7	-3.22789	3.75221
99	102.366	-25.5227	7.52583	4.91246	130.4	-3.18569	3.73947
100	102.366	-25.5227	11.2888	4.85734	130.2	-3.13457	3.71056
101	102.366	-25.5227	15.0517	4.78396	130.	-3.0735	3.66605
102	102.366	-25.5227	18.8146	4.69239	129.8	-3.0022	3.60629
103	102.366	-25.5227	22.5775	4.58285	129.6	-2.92063	3.53163
104	102.366	-25.5227	26.3404	4.45566	129.4	-2.82895	3.44237
105	102.366	-25.5227	30.1033	4.31121	129.2	-2.72736	3.33887
106	102.366	-25.5227	33.8663	4.14998	129.1	-2.61618	3.22148
107	102.366	-25.5227	37.6292	3.97248	128.9	-2.49573	3.09062
108	102.366	-25.5227	41.3921	3.77933	128.8	-2.36643	2.94675
109	102.366	-25.5227	45.155	3.57112	128.6	-2.2287	2.79031
110	102.366	-25.5227	48.9179	3.34852	128.5	-2.08297	2.62179
111	102.366	-25.5227	52.6808	3.1122	128.3	-1.92973	2.44171
112	102.366	-25.5227	56.4438	2.86286	128.2	-1.76944	2.25057
113	102.366	-25.5227	60.2067	2.60114	128.	-1.60255	2.04885
114	102.366	-25.5227	63.9696	2.32767	127.9	-1.42949	1.837
115	102.366	-25.5227	67.7325	2.04293	127.7	-1.25063	1.61539
116	102.366	-25.5227	71.4954	1.74725	127.6	-1.0662	1.38423
117	102.366	-25.5227	75.2583	1.44055	127.5	-.87624	1.14341
118	102.366	-25.5227	79.0213	1.12204	127.3	-.6803	.892284
119	102.366	-25.5227	82.7842	.789229	127.2	-.476957	.628804

120	102.366	-25.5227	86.5471	.435406	127.	-.262251	.347566
END	102.366	-25.5227	90.31	0	0	0	0

APPENDIX D

DETUNED TOWER MODELS

ELECTRICAL DESCRIPTION - TOWER #4 DETUNE
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.71	0	1	.010257	.010257

Plane wave source

zenith angle (deg)	= 90
increment (deg)	= 0
number of angles	= 1
azimuth angle (deg)	= 0
increment (deg)	= 0
number of angles	= 1
polarization angle (deg)	= 0
magnitude (v/m)	= 1

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.122	0	0

GEOMETRY - TOWER #4 DETUNE
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.2911	24
		0	0	88.62		

Number of wires = 1
current nodes = 24

Individual wires	minimum wire	minimum value	maximum wire	maximum value
segment length	1	3.6925	1	3.6925
radius	1	.2911	1	.2911

RMS CURRENTS - TOWER #4 DETUNE
Frequency = .71 MHz
Plane wave zenith (deg) = 90
Plane wave azimuth (deg) = 0
Polarization angle (deg) = 0
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	.177043	270.1	2.36E-04	-.177043
2	0	0	3.6925	.135253	270.1	1.81E-04	-.135253
3	0	0	7.385	.108283	270.1	1.45E-04	-.108283
4	0	0	11.0775	.085128	270.1	1.15E-04	-.0851279
5	0	0	14.77	.0645278	270.1	8.8E-05	-.0645277
6	0	0	18.4625	.0459458	270.1	6.41E-05	-.0459458
7	0	0	22.155	.0291316	270.1	4.27E-05	-.0291315
8	0	0	25.8475	.0139558	270.1	2.36E-05	-.0139558
9	0	0	29.54	3.51E-04	271.1	6.66E-06	-3.51E-04
10	0	0	33.2325	.0117179	90.	-8.13E-06	.0117179
11	0	0	36.925	.0222653	90.1	-2.09E-05	.0222653
12	0	0	40.6175	.0312947	90.1	-3.16E-05	.0312947
13	0	0	44.31	.0388025	90.1	-4.03E-05	.0388025
14	0	0	48.0025	.0447808	90.1	-4.71E-05	.0447808
15	0	0	51.695	.0492192	90.1	-5.19E-05	.0492192
16	0	0	55.3875	.0521054	90.1	-5.49E-05	.0521054
17	0	0	59.08	.0534255	90.1	-5.61E-05	.0534255

18	0	0	62.7725	.0531628	90.1	-5.55E-05	.0531628
19	0	0	66.465	.0512967	90.1	-5.31E-05	.0512966
20	0	0	70.1575	.0477981	90.1	-4.91E-05	.0477981
21	0	0	73.85	.0426227	90.1	-4.33E-05	.0426227
22	0	0	77.5425	.0356946	90.1	-3.59E-05	.0356946
23	0	0	81.235	.0268652	90.1	-2.67E-05	.0268652
24	0	0	84.9275	.0158026	90.1	-1.55E-05	.0158026
END	0	0	88.62	0	0	0	0

ELECTRICAL DESCRIPTION - TOWER #3 DETUNE
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.71	0	1	.0104329	.0104329

Plane wave source

zenith angle (deg)	= 90
increment (deg)	= 0
number of angles	= 1
azimuth angle (deg)	= 0
increment (deg)	= 0
number of angles	= 1
polarization angle (deg)	= 0
magnitude (v/m)	= 1

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.109	0	0

GEOMETRY - TOWER #3 DETUNE
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.14		

Number of wires = 1
current nodes = 24

	minimum wire	minimum value	maximum wire	maximum value
Individual wires				
segment length	1	3.75583	1	3.75583
radius	1	.4075	1	.4075

RMS CURRENTS - TOWER #3 DETUNE
Frequency = .71 MHz
Plane wave zenith (deg) = 90
Plane wave azimuth (deg) = 0
Polarization angle (deg) = 0
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	.201622	270.1	3.52E-04	-.201622
2	0	0	3.75583	.151732	270.1	2.65E-04	-.151732
3	0	0	7.51167	.121369	270.1	2.13E-04	-.121369
4	0	0	11.2675	.0953867	270.1	1.68E-04	-.0953866
5	0	0	15.0233	.0723569	270.1	1.29E-04	-.0723568
6	0	0	18.7792	.0516223	270.1	9.4E-05	-.0516222
7	0	0	22.535	.0328785	270.1	6.28E-05	-.0328784
8	0	0	26.2908	.0159678	270.1	3.49E-05	-.0159677
9	0	0	30.0467	8.07E-04	270.7	1.02E-05	-8.06E-04
10	0	0	33.8025	.0126482	90.1	-1.15E-05	.0126482
11	0	0	37.5583	.0244159	90.1	-3.01E-05	.0244159
12	0	0	41.3142	.0345019	90.1	-4.58E-05	.0345019
13	0	0	45.07	.0429028	90.1	-5.86E-05	.0429027
14	0	0	48.8258	.0496103	90.1	-6.86E-05	.0496103
15	0	0	52.5817	.0546127	90.1	-7.58E-05	.0546126
16	0	0	56.3375	.0578958	90.1	-8.04E-05	.0578958
17	0	0	60.0933	.0594434	90.1	-8.22E-05	.0594434

18	0	0	63.8492	.059236	90.1	-8.14E-05	.059236
19	0	0	67.605	.0572488	90.1	-7.81E-05	.0572487
20	0	0	71.3608	.0534471	90.1	-7.23E-05	.053447
21	0	0	75.1167	.0477779	90.1	-6.4E-05	.0477779
22	0	0	78.8725	.0401506	90.1	-5.32E-05	.0401506
23	0	0	82.6283	.0303865	90.1	-3.98E-05	.0303865
24	0	0	86.3842	.0181119	90.1	-2.34E-05	.0181119
END	0	0	90.14	0	0	0	0

ELECTRICAL DESCRIPTION - TOWER #5 DETUNE
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	.71	0	1	.0104815	.0104815

Plane wave source
zenith angle (deg) = 90
increment (deg) = 0
number of angles = 1
azimuth angle (deg) = 0
increment (deg) = 0
number of angles = 1
polarization angle (deg) = 0
magnitude (v/m) = 1

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	1.E-03	0	.109	0	0

GEOMETRY - TOWER #5 DETUNE
Wire coordinates in degrees; other dimensions in meters
Environment: perfect ground

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.4075	24
		0	0	90.56		

Number of wires = 1
current nodes = 24

Individual wires	minimum wire	value	maximum wire	value
segment length	1	3.77333	1	3.77333
radius	1	.4075	1	.4075

RMS CURRENTS - TOWER #5 DETUNE
Frequency = .71 MHz
Plane wave zenith (deg) = 90
Plane wave azimuth (deg) = 0
Polarization angle (deg) = 0
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	.202485	270.1	2.96E-04	-.202485
2	0	0	3.77333	.152259	270.1	2.23E-04	-.152259
3	0	0	7.54667	.121657	270.1	1.79E-04	-.121657
4	0	0	11.32	.0954687	270.1	1.41E-04	-.0954686
5	0	0	15.0933	.072253	270.1	1.08E-04	-.0722529
6	0	0	18.8667	.0513508	270.1	7.89E-05	-.0513507
7	0	0	22.64	.0324558	270.1	5.26E-05	-.0324557
8	0	0	26.4133	.01541	270.1	2.93E-05	-.01541
9	0	0	30.1867	1.3E-04	273.8	8.62E-06	-1.3E-04
10	0	0	33.96	.0134263	90.	-9.41E-06	.0134263
11	0	0	37.7333	.0252785	90.1	-2.49E-05	.0252785
12	0	0	41.5067	.0354313	90.1	-3.79E-05	.0354313
13	0	0	45.28	.043881	90.1	-4.85E-05	.043881
14	0	0	49.0533	.0506189	90.1	-5.67E-05	.0506189
15	0	0	52.8267	.0556329	90.1	-6.26E-05	.0556328
16	0	0	56.6	.0589086	90.1	-6.62E-05	.0589086
17	0	0	60.3733	.0604295	90.1	-6.76E-05	.0604295

18	0	0	64.1467	.0601761	90.1	-6.69E-05	.0601761
19	0	0	67.92	.0581232	90.1	-6.4E-05	.0581232
20	0	0	71.6933	.0542362	90.1	-5.91E-05	.0542362
21	0	0	75.4667	.0484617	90.1	-5.22E-05	.0484616
22	0	0	79.24	.0407082	90.1	-4.33E-05	.0407082
23	0	0	83.0133	.0307958	90.1	-3.23E-05	.0307958
24	0	0	86.7867	.0183463	90.1	-1.89E-05	.0183462
END	0	0	90.56	0	0	0	0

Diplex Maintenance and Repair Agreement

This agreement (this "**Agreement**") is entered into as of October 1, 2022 between ABC RADIO LOS ANGELES ASSETS, LLC owner of radio station KRDC (AM) 1110 kHz, Pasadena, CA, FCC ID No. 25076 ("**KRDC**") and GOOD KARMA BROADCASTING, LLC, owner of radio station KSPN (AM) 710 kHz, Los Angeles, CA., FCC ID No. 33255, ("**KSPN**").

KRDC and KSPN diplex their broadcast radio signals into common towers located at North Latitude 34° 6' 50.44", West Longitude 117° 59' 52.44", commonly known as 277 Longden Ave., Irwindale, CA. 91706 , FCC Antenna Structure Registrations: 1012884, 1012885, 1012886, 1012887, and 1012888, ("**Property**").

KRDC and KSPN agree that adequate filters, traps and other equipment have been installed as a part of the construction of the diplexing system and have been appropriately adjusted to prevent interaction, intermodulation and/or generation of spurious radiation products which may be caused by common usage of the same antenna system by KRDC and KSPN. The parties will mutually cooperate with each other in a good faith effort to ensure that KRDC and KSPN do not interfere with each other, including the taking of field observations to determine whether spurious emissions exist and, in the event that they do exist, to ensure that any objectionable problems resulting therefrom shall be eliminated.

KSPN and KRDC will each, at its own risk and expense, maintain and repair, including replacement if necessary to standards reasonably agreed upon by the parties, the FCC rules and regulations, good engineering practices, the provisions of this Agreement, their individual transmission facilities, and any other items or things placed on the Property by each owner, pursuant to this Agreement. All maintenance shall be performed in a manner suitable to both KSPN and KRDC and shall not conflict with the use and requirements of the Property by either party. KSPN and KRDC will have equally share financial responsibility for maintaining all diplexing required components and systems. All maintenance shall be provided by qualified technicians authorized to enter the Property. KRDC and KSPN will be responsible for the maintenance and proper operations of the towers, buildings, and required fencing. Within good engineering practices, KSPN agrees to accept KRDC's tower maintenance requirements and schedules, and KRDC agrees that it will not be unreasonable with providing necessary tower maintenance and notices of such, including maintenance that may encumber any party's diplexing operations. Both parties agree that it will be their sole responsible for all costs related to permits, licenses, or FCC filings that occur as a result of any changes the party causes.

The parties share common Property and building space pursuant to that certain Amended and Restated Sublease Agreement dated as of October 1, 2022 between KRDC and KSPN (the "**Sublease**"). Access to the Property shall be determined in accordance with the Sublease.

Upon expiration or other termination of this Agreement and the Sublease, removal of the parties' respective equipment shall be in accordance with the provisions of the Sublease.

Any notice, request, instruction or other communication to be given hereunder by either Party to the other Party shall be in writing and delivered personally, or sent by postpaid registered or certified mail, or by email (provided confirmation of email receipt is obtained):

If to KRDC:

ESPN Audio
ESPN Plaza
Building 2/3-46
Bristol, CT 06010-1099
Attention: Scott McCarthy
Email: scott.mccarthy@espn.com

with a copy (which shall not constitute notice) to:

The Walt Disney Company
500 South Buena Vista Street
Burbank, California 91521
Attention: Jim M. Kapenstein
Email: james.kapenstein@disney.com

If to KSPN:

Good Karma Broadcasting, LLC
275 West Wisconsin Avenue
Milwaukee, Wisconsin 53203
Attention: Craig Karmazin
Email: ckarmazin@goodkarmabrands.com

with a copy (which shall not constitute notice) to:

Lerman Senter PLLC
2001 L Street, NW, Suite 400
Washington, DC 20036
Attention: Nancy A. Ory
Email: nory@lermansenter.com

or to such other address for either Party as such Party shall hereafter designate by like notice.

This Agreement constitutes the entire and whole agreement of the parties with respect to the diplexing system, and may not be modified, amended or changed in any way unless in writing signed by all of the parties hereto. The failure of any party hereto to enforce at any time any provision of this Agreement shall not be construed to be a waiver of such provision, nor in any way to affect the validity of this Agreement or any part hereof, or the right of any party thereafter to enforce each and every such provision. No waiver of any breach of this Agreement shall be held to constitute a waiver of any other or subsequent breach.

This Agreement shall be binding upon and shall inure to the benefit of the parties hereto, their heirs, personal representatives, successors and assigns. This Agreement shall not be assigned or transferred by any party without the prior written consent of the other party, except that (i) KRDC may assign this Agreement in whole to an affiliate and (ii) KSPN may assign this Agreement in accordance with the provisions of the Sublease and any other contractual or regulatory limitations on assignment applicable thereto. An assignment shall not relieve the parties of their obligations to guarantee the prompt performance of any and all of the obligations hereunder.

This Agreement shall be governed by and construed in accordance with the laws of the State of California. This Agreement may be signed in one or more counterparts, each of which shall be considered an original counterpart, and shall become a binding Agreement when the parties shall have each executed one counterpart.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties hereto have signed and sealed this agreement as of the day and year first above written.

ABC RADIO LOS ANGELES ASSETS, LLC,

By: Circle Location Servcies, Inc., its Member Manager

DocuSigned by:

By: James M. Kapenstein
5EBE235836B349B...

Name: James M. Kapenstein

Title: President

GOOD KARMA BROADCASTING, LLC

DocuSigned by:

By: Craig Karmazin
99A7B28D11EA4D9...

Name: Craig Karmazin

Title: Managing Member