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May 8, 2017

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BY HAND DELIVERY

Marlene H. Dortch, Esq.
Secretary
Federal Communications Commission
445 12th Street SW, Room TW-A325
Washington, DC 20554

Accepted / Filed
MAY - 8 2017
Federal Communications Commission
Office of the Secretary

Attn: Audio Division, Media Bureau

Re: Amendment to Application for Station License
WYMM(AM), Jacksonville, FL (Facility ID #11127)
File No. BMML-20160818ABS

Dear Ms. Dortch:

Transmitted herewith in triplicate on behalf of AVM Broadcasting LLC, the licensee of radio station WYMM(AM), Jacksonville, Florida, is an amendment to the above-referenced application on FCC Form 302-AM. This amendment timely responds to a staff deficiency letter dated April 6, 2017.

Should there be any questions concerning this matter, please contact the undersigned.

Very truly yours,

Gregory L. Masters

cc: Edward Lubetsky, Audio Division (via email)

14102739.1

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant
AVM BROADCASTING LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☑ Station License ☐ Direct Measurement of Power

1. Facilities authorized in construction permit					
Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
				Night	Day
WYMM	N/A	1530	DAYTIME		50.0

2. Station location	
State	City or Town
FLORIDA	JACKSONVILLE

3. Transmitter location			
State	County	City or Town	Street address (or other identification)
FL	DUVAL	Jacksonville	5900 Pickettville Rd.

4. Main studio location			
State	County	City or Town	Street address (or other identification)
FL	DUVAL	Jacksonville	5900 Pickettville Rd.

5. Remote control point location (specify only if authorized directional antenna)			
State	County	City or Town	Street address (or other identification)
FL	DUVAL	Jacksonville	5900 Pickettville Rd.

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.

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
	32.4
Measured antenna or common point resistance (in ohms) at operating frequency Night / Day	Measured antenna or common point reactance (in ohms) at operating frequency Night / Day
50.0	-8.4

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(SOUTH)		0.0		1.000		
2(NORTH)		104.9		.540		

Manufacturer and type of antenna monitor: Potomac Instruments AM-19(204)

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.
Guyed Tower	114.3	115.2	116.1	Exhibit No. ENG.

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	30 °	21 '	50 "	West Longitude	81 °	44 '	54 "

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.

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

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.

Antenna Installation

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)
Kurt Gorman	
Address (include ZIP Code) Phasetek Inc. 550 California Rd., Unit 11 Quakertown, PA 18951	Date May 3, 2017 Telephone No. (Include Area Code) 215-536-6648

☐ Technical Director

☐ Registered Professional Engineer

☐ Chief Operator

☑ Technical Consultant

☐ Other (specify)

PHASETEK INC.

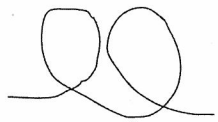
ENGINEERING AMENDMENT
WYMM, 1530 KHZ, DA-D
JACKSONVILLE, FLORIDA
MAY, 2017

This Amendment is in response to the Commission's letter dated April 6, 2017, concerning the License Application for Radio Station WYMM, Jacksonville, Florida.

1. Concerning the common point current, this has been changed to 32.4 amperes.

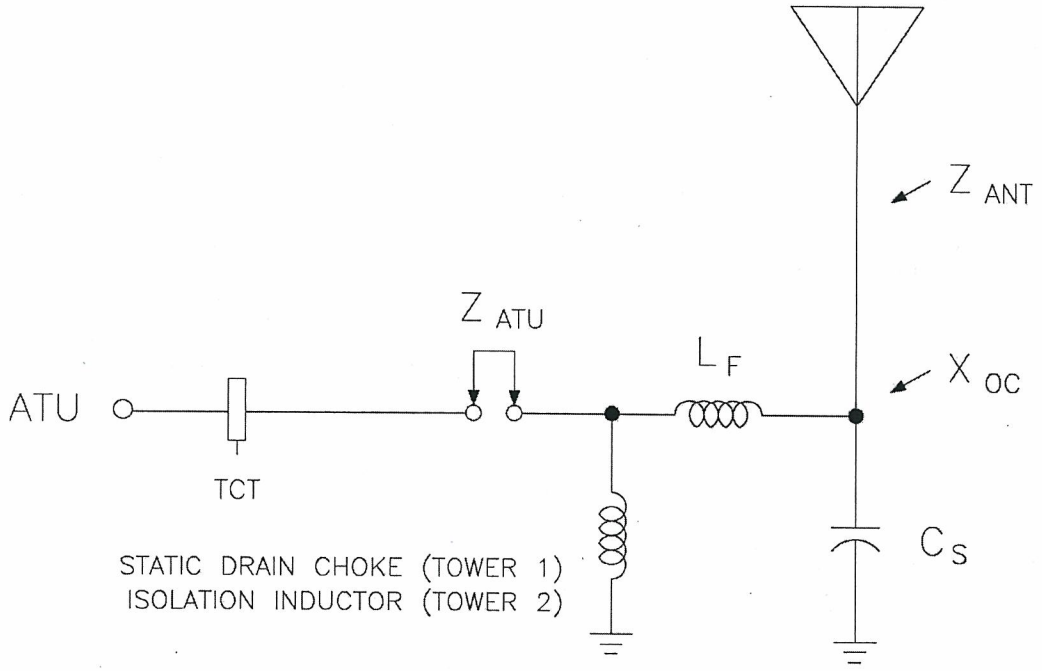
2. Concerning the circuit model to determine the self-impedances, revised impedance measurement data is included with static drain choke (tower #1) and isolation inductor (tower #2) as used for the directional mode circuit calculations. Original tower open circuit measurements had these disconnected.

3. Concerning the guy wire top loading, the model has been modified to incorporate the wire lengths at 100% of the actual physical length. The actual length of "hot" guy wire is 33.6° @ 1530 kHz at an angle of 45° relative to the tower top. This yields an effective top loading of 23.7°. Top loading for both towers is identical. The revised model yields a "warning" message for the diameter ratio at the junction of the tower top to the top loading. A convergence test was performed on tower 1 (both tower models are the same), to verify the model. This is attached as Figure 13. Revised parameters have been computed and are shown on the revised 302-AM form.



Kurt Gorman
Phasetek, Inc.

FIGURE 3
WYMM TOWER IMPEDANCE MEASUREMENTS COMPARED TO METHOD OF MOMENTS MODEL
APPLICATION FOR LICENSE INFORMATION
EMPLOYING MOMENT METHOD MODELING
WYMM, 1530 KHZ, DA-D
JACKSONVILLE, FLORIDA
AMENDED 5/1/17



TOWER	Specified Cs (pf)	Measured L_F (µH)	Measured X_F (Ω)	Modeled Z_{ANT} (Ω)	Modeled Z_{ATU} (Ω)	Measured Z_{ATU} (Ω)
1	15	9.00	+j86.5	33.0 –j 163.6	30.8 –j 72.8	33.5 –j 69.3
2	15	9.36	+j90.0	32.7 –j 163.8	34.1 –j 72.7	36.0 –j 68.7

Tower	Calculated X_{OC} (Ω)
1	- j 3,385.2
2	+ j 2,234.5

FIGURE 4
WYMM MOMENT MODEL PARAMETERS

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Tower #	Wire #	# of Segments	Base Node
1	1-4	33	1
2	5-8	33	34

Tower #	Physical Height Degrees	Modeled Height Degrees	Modeled Radius Meters	% of Equivalent Radius
1	210.0 +TL	200.0 +TL	.291	80.0
2	210.0 +TL	200.0 +TL	.291	80.0

Both Towers are uniform cross section, guyed with Base Insulator. Towers are three (3) sided, 30" face width. Base Insulators for both towers are manufactured by Lapp Insulators, with an assumed capacity of 15pf (-j6,934.9 ohms @ 1530 kHz). Guy wire top-loading is modeled at 100% of the actual length.

Tower1 has a Phasetek Inc. static drain choke. This measures –j6,700.0 ohms @ 1530 kHz. The FM line at tower 2 is isolated at the base with an isolation inductor. This measures +j1,600.0 ohms @ 1530 kHz.

FIGURE 5
WYMM MOMENT SUMMARY FOR INDIVIDUAL TOWERS

AMENDED 5/1/17

WYMM TOWER 1 (OTHER OPEN)

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	24
		0	0	200.		
2	none	0	0	200.	.01	3
		23.7	60.	176.3		
3	none	0	0	200.	.01	3
		23.7	180.	176.3		
4	none	0	0	200.	.01	3
		23.7	300.	176.3		
5	none	90.	0	0	.291	24
		90.	0	200.		
6	none	90.	0	200.	.01	3
		113.7	0	176.3		
7	none	90.	0	200.	.01	3
		80.8	14.72	176.3		
8	none	90.	0	200.	.01	3
		80.8	345.28	176.3		

Number of wires = 8
current nodes = 66

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	1	8.33333	8	11.1738
radius	2	.01	1	.291

ELECTRICAL DESCRIPTION
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1.53	0	1	.0231482	.0310382

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	34	0	2,234.5	0	0	0

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1.53	33.003	-163.55	166.85	281.4	18.331	-.94864	-7.0725

WYMM TOWER 2 (OTHER OPEN)

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	24
		0	0	200.		
2	none	0	0	200.	.01	3
		23.7	60.	176.3		
3	none	0	0	200.	.01	3
		23.7	180.	176.3		
4	none	0	0	200.	.01	3
		23.7	300.	176.3		
5	none	90.	0	0	.291	24
		90.	0	200.		
6	none	90.	0	200.	.01	3
		113.7	0	176.3		
7	none	90.	0	200.	.01	3
		80.8	14.72	176.3		
8	none	90.	0	200.	.01	3
		80.8	345.28	176.3		

Number of wires = 8
current nodes = 66

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	1	8.33333	8	11.1738
radius	2	.01	1	.291

ELECTRICAL DESCRIPTION
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1.53	0	1	.0231482	.0310382

Sources

source	node	sector	magnitude	phase	type
1	34	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-3,385.2	0	0	0

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 34, sector 1							
1.53	32.681	-163.81	167.04	281.3	18.552	-.9373	-7.1193

FIGURE 6
WYMM MOMENT MODEL ARRAY SYNTHESIS
(DIRECTIONAL – DAY)

APPLICATION FOR LICENSE INFORMATION
EMPLOYING MOMENT METHOD MODELING
WYMM, 1530 KHZ, DA-D
JACKSONVILLE, FLORIDA
AMENDED 5/1/17

WYMM DA

MEDIUM WAVE ARRAY SYNTHESIS FROM FIELD RATIOS

Frequency = 1.53 MHz

tower	field ratio magnitude	phase (deg)
1	1.	0
2	.9	95.

VOLTAGES AND CURRENTS - rms

source node	voltage magnitude	phase (deg)	current magnitude	phase (deg)
1	5,664.83	80.3	36.7255	157.3
34	4,141.95	174.9	21.2158	262.9

Sum of square of source currents = 3,597.75
Total power = 50,000. watts

TOWER ADMITTANCE MATRIX

admittance	real (mhos)	imaginary (mhos)
Y(1, 1)	.00105943	.00585342
Y(1, 2)	.000586765	-.000600564
Y(2, 1)	.000586764	-.000600564
Y(2, 2)	.00105948	.00585426

TOWER IMPEDANCE MATRIX

impedance	real (ohms)	imaginary (ohms)
Z(1, 1)	32.8058	-163.732
Z(1, 2)	21.5161	-9.61464
Z(2, 1)	21.5161	-9.61463
Z(2, 2)	32.7984	-163.71

FIGURE 7
WYMM MOMENT MODEL SUMMARY FOR DIRECTIONAL DAY MODE

APPLICATION FOR LICENSE INFORMATION EMPLOYING MOMENT METHOD MODELING WYMM, 1530 KHZ, DA-D JACKSONVILLE, FLORIDA AMENDED 5/1/17

WYMM DA

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	24
		0	0	200.		
2	none	0	0	200.	.01	3
		23.7	60.	176.3		
3	none	0	0	200.	.01	3
		23.7	180.	176.3		
4	none	0	0	200.	.01	3
		23.7	300.	176.3		
5	none	90.	0	0	.291	24
		90.	0	200.		
6	none	90.	0	200.	.01	3
		113.7	0	176.3		
7	none	90.	0	200.	.01	3
		80.8	14.72	176.3		
8	none	90.	0	200.	.01	3
		80.8	345.28	176.3		

Number of wires = 8
current nodes = 66

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	1	8.33333	8	11.1738
radius	2	.01	1	.291

ELECTRICAL DESCRIPTION
Frequencies (MHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	1.53	0	1	.0231482	.0310382

Sources

source	node	sector	magnitude	phase	type
1	1	1	8,011.28	80.3	voltage
2	34	1	5,857.6	174.9	voltage

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1.53	34.816	-150.27	154.25	283.	15.037	-1.157	-6.3103
source = 2; node 34, sector 1							
1.53	6.7585	-195.11	195.23	272.	120.18	-.14455	-14.85

CURRENT rms
Frequency = 1.53 MHz
Input power = 50,000. watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	36.7256	157.3	-33.8809	14.1722
2	0	0	8.33333	31.0911	155.	-28.1822	13.1308
3	0	0	16.6667	26.6548	152.9	-23.7206	12.1579
4	0	0	25.	22.1361	150.1	-19.1886	11.0366
5	0	0	33.3333	17.4799	146.1	-14.5002	9.76169
6	0	0	41.6667	12.7733	139.2	-9.66828	8.34762
7	0	0	50.	8.30831	124.8	-4.7467	6.81886
8	0	0	58.3333	5.20881	87.9	.192345	5.20526
9	0	0	66.6667	6.18143	34.9	5.0673	3.54015
10	0	0	75.	9.96752	10.7	9.79266	1.85883
11	0	0	83.3333	14.2841	.8	14.2827	.197443
12	0	0	91.6667	18.508	355.6	18.4544	-1.40807
13	0	0	100.	22.4208	352.5	22.2295	-2.92289
14	0	0	108.333	25.8991	350.4	25.5373	-4.31425
15	0	0	116.667	28.8553	348.9	28.3161	-5.55226
16	0	0	125.	31.2235	347.8	30.5157	-6.6107
17	0	0	133.333	32.9559	346.9	32.0986	-7.4679
18	0	0	141.667	34.0231	346.2	33.043	-8.10755
19	0	0	150.	34.4169	345.7	33.3457	-8.51994
20	0	0	158.333	34.1546	345.2	33.0272	-8.70308
21	0	0	166.667	33.2866	344.9	32.1389	-8.66546
22	0	0	175.	31.903	344.7	30.7699	-8.42731
23	0	0	183.333	30.1185	344.6	29.0317	-8.01775
24	0	0	191.667	28.0291	344.6	27.0168	-7.46465
J1	0	0	200.	25.9658	344.7	25.0427	-6.86187
2J1	0	0	200.	8.65984	344.2	8.33263	-2.35801
26	3.95	-6.8416	192.1	6.47203	344.6	6.23848	-1.72295
27	7.9	-13.6832	184.2	3.52991	345.	3.40923	-.915124
END	11.85	-20.5248	176.3	0	0	0	0
2J1	0	0	200.	8.64791	345.6	8.37746	-2.14585
29	-7.9	0	192.1	6.46465	346.2	6.27899	-1.53817
30	-15.8	0	184.2	3.52873	346.9	3.4367	-.800665
END	-23.7	0	176.3	0	0	0	0
2J1	0	0	200.	8.65984	344.2	8.33263	-2.35801
32	3.95	6.8416	192.1	6.47204	344.6	6.23848	-1.72295
33	7.9	13.6832	184.2	3.52992	345.	3.40923	-.915124
END	11.85	20.5248	176.3	0	0	0	0
GND	90.	0	0	21.2158	262.9	-2.62628	-21.0526
35	90.	0	8.33333	17.015	262.3	-2.27011	-16.8629
36	90.	0	16.6667	13.7782	261.5	-2.03803	-13.6266
37	90.	0	25.	10.5388	259.9	-1.84058	-10.3769
38	90.	0	33.3333	7.24331	256.7	-1.66763	-7.04873
39	90.	0	41.6667	3.95109	247.5	-1.51417	-3.64944
40	90.	0	50.	1.39362	188.9	-1.37681	-.215828
41	90.	0	58.3333	3.43845	111.4	-1.25263	3.20216
42	90.	0	66.6667	6.64666	99.9	-1.13895	6.54835
43	90.	0	75.	9.81868	96.	-1.03318	9.76417
44	90.	0	83.3333	12.8254	94.2	-.933043	12.7914
45	90.	0	91.6667	15.5965	93.1	-.836494	15.574
46	90.	0	100.	18.0755	92.4	-.74194	18.0602
47	90.	0	108.333	20.214	91.8	-.648234	20.2036
48	90.	0	116.667	21.9717	91.4	-.554812	21.9647
49	90.	0	125.	23.3168	91.1	-.461738	23.3123
50	90.	0	133.333	24.2276	90.9	-.369778	24.2248
51	90.	0	141.667	24.6935	90.7	-.280464	24.6919
52	90.	0	150.	24.7173	90.5	-.196137	24.7165
53	90.	0	158.333	24.3191	90.3	-.119965	24.3188
54	90.	0	166.667	23.5417	90.1	-.0559135	23.5416
55	90.	0	175.	22.454	90.	-8.55E-03	22.454
56	90.	0	183.333	21.1411	90.	.0175655	21.1411
57	90.	0	191.667	19.6711	89.9	.0189144	19.6711
J5	90.	0	200.	18.2742	90.	-6.93E-03	18.2742

2J1	90.	0	200.	6.04133	88.2	.186809	6.03844
59	97.9	0	192.1	4.55442	88.2	.140636	4.55225
60	105.8	0	184.2	2.50712	88.2	.0766752	2.50595
END	113.7	0	176.3	0	0	0	0
2J1	90.	0	200.	6.11863	90.9	-.0968688	6.11787
62	86.0494	-6.84364	192.1	4.62274	91.3	-.106032	4.62153
63	82.0987	-13.6873	184.2	2.55118	91.7	-.0755481	2.55006
END	78.1481	-20.5309	176.3	0	0	0	0
2J1	90.	0	200.	6.11864	90.9	-.0968688	6.11787
65	86.0494	6.84364	192.1	4.62275	91.3	-.106032	4.62153
66	82.0987	13.6873	184.2	2.55118	91.7	-.0755481	2.55006
END	78.1481	20.5309	176.3	0	0	0	0

FIGURE 8
DERIVED DIRECTIONAL PARAMETERS

APPLICATION FOR LICENSE INFORMATION
EMPLOYING MOMENT METHOD MODELING
WYMM, 1530 KHZ, DA-D
JACKSONVILLE, FLORIDA
AMENDED 5/1/17

DAY:

	Theoretical		Base Network Input Current		Normalized TCT	
Tower	**Field**	**Phase**	**Amplitude**	**Phase**	**Amplitude**	**Phase**
1 (S)	1.000	0.0°	37.86	157.82°	1.000	0.0°
2 (N)	.900	95.0°	20.45	-97.27°	.540	104.9°

FIGURE 9
WYMM TOWER BASE CIRCUIT ANALYSIS DESCRIPTION

APPLICATION FOR LICENSE INFORMATION
EMPLOYING MOMENT METHOD MODELING
WYMM, 1530 KHZ, DA-D
JACKSONVILLE, FLORIDA
AMENDED 5/1/17

CIRCUIT ANALYSIS

Circuit Analysis was performed on each Tower of the WYMM model. "Phasetek" nodal Circuit Analysis program was used to compute base model Input/Output voltages and currents. For the Directional modes, the calculated Mininec Tower Base Drive Voltage was used to determine the Base Network Input current. This point is the location of the Sampling TCT. "Z_1" represents the ATU Shunt impedance, "Z_2" represents the Tower Feed impedance, and "Z_3" represents the Tower Base Shunt impedance.

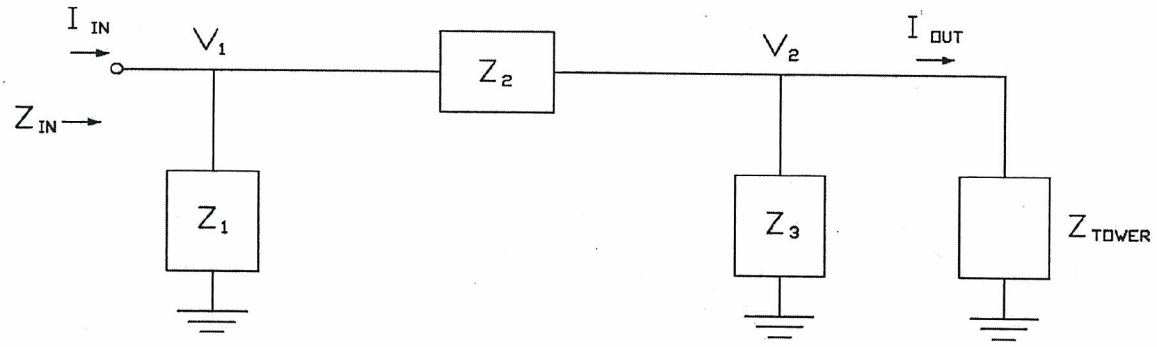

FIGURE 10
WYMM CIRCUIT ANALYSIS FOR INDIVIDUAL TOWERS
AMENDED 5/1/17

CUSTOMER : WYMM
NETWORK ID : TOWER 1 (OTHER OPEN)

FREQUENCY : 1530.00 kHz
ATU SHUNT IMPEDANCE (R,X) : 0.00, -6700.00 OHMS
TOWER FEED IMPEDANCE (R,X) : 0.00, 86.50 OHMS
TOWER SHUNT IMPEDANCE (R,X) : 0.00, -6934.90 OHMS
TOWER IMPEDANCE (R,X) : 33.00, -163.55 OHMS

NODE	TO	NODE	IMPEDANCE (OHMS) R	X
1		GROUND	0.00	-6700.00
2		GROUND	31.50	-159.93
1		2	0.00	86.50

NODE	VOLTAGE MAGNITUDE	PHASE
1	100.00	0.00
2	204.01	-12.08

	REAL	IMAGINARY	MAGNITUDE	PHASE
INPUT IMPEDANCE (OHMS) :	30.82	-72.78	79.03	-67.05
INPUT CURRENT (AMPS) :	0.49	1.17	1.27	67.05
OUTPUT CURRENT (AMPS) :	0.49	1.12	1.22	66.52

INPUT/OUTPUT CURRENT RATIO = 1.0348
INPUT/OUTPUT PHASE = 0.53 DEGREES

CUSTOMER : WYMM
NETWORK ID : TOWER 2 (OTHER OPEN)

FREQUENCY : 1530.00 kHz
ATU SHUNT IMPEDANCE (R,X) : 0.00, 1600.00 OHMS
TOWER FEED IMPEDANCE (R,X) : 0.00, 90.00 OHMS
TOWER SHUNT IMPEDANCE (R,X) : 0.00, -6934.90 OHMS
TOWER IMPEDANCE (R,X) : 32.68, -163.81 OHMS

NODE	TO	NODE	IMPEDANCE (OHMS) R	X
1		GROUND	0.00	1600.00
2		GROUND	31.19	-160.17
1		2	0.00	90.00

NODE	VOLTAGE MAGNITUDE	PHASE
1	100.00	0.00
2	212.50	-12.94

	REAL	IMAGINARY	MAGNITUDE	PHASE
INPUT IMPEDANCE (OHMS) :	34.10	-72.70	80.30	-64.87
INPUT CURRENT (AMPS) :	0.53	1.13	1.25	64.87
OUTPUT CURRENT (AMPS) :	0.52	1.16	1.27	65.77

INPUT/OUTPUT CURRENT RATIO = 0.9789
INPUT/OUTPUT PHASE = -0.90 DEGREES

FIGURE 11
WYMM CIRCUIT ANALYSIS FOR DIRECTIONAL DAY MODE
AMENDED 5/1/17

CUSTOMER : WYMM
NETWORK ID : TOWER 1 DA

FREQUENCY : 1530.00 kHz
ATU SHUNT IMPEDANCE (R,X) : 0.00, -6700.00 OHMS
TOWER FEED IMPEDANCE (R,X) : 0.00, 86.50 OHMS
TOWER SHUNT IMPEDANCE (R,X) : 0.00, -6934.90 OHMS
TOWER IMPEDANCE (R,X) : 34.82, -150.27 OHMS

NODE	TO	NODE	IMPEDANCE (OHMS) R	X
1		GROUND	0.00	-6700.00
2		GROUND	33.35	-147.25
1		2	0.00	86.50

NODE	VOLTAGE MAGNITUDE	PHASE
1	2600.26	96.31
2	5664.83	80.30

	REAL	IMAGINARY	MAGNITUDE	PHASE
INPUT IMPEDANCE (OHMS) :	32.76	-60.36	68.68	-61.51
INPUT CURRENT (AMPS) :	-35.06	14.29	37.86	157.82
OUTPUT CURRENT (AMPS) :	-33.87	14.20	36.72	157.26

INPUT/OUTPUT CURRENT RATIO = 1.0310
INPUT/OUTPUT PHASE = 0.56 DEGREES

CUSTOMER : WYMM
NETWORK ID : TOWER 2 DA

FREQUENCY : 1530.00 kHz
ATU SHUNT IMPEDANCE (R,X) : 0.00, 1600.00 OHMS
TOWER FEED IMPEDANCE (R,X) : 0.00, 90.00 OHMS
TOWER SHUNT IMPEDANCE (R,X) : 0.00, -6934.90 OHMS
TOWER IMPEDANCE (R,X) : 6.76, -195.11 OHMS

NODE	TO NODE	IMPEDANCE (OHMS) R	X
1	GROUND	0.00	1600.00
2	GROUND	6.39	-189.78
1	2	0.00	90.00

NODE	VOLTAGE MAGNITUDE	PHASE
1	2180.90	176.64
2	4141.95	174.90

	REAL	IMAGINARY	MAGNITUDE	PHASE
INPUT IMPEDANCE (OHMS) :	7.27	-106.38	106.63	-86.09
INPUT CURRENT (AMPS) :	-2.59	-20.29	20.45	-97.27
OUTPUT CURRENT (AMPS) :	-2.62	-21.05	21.22	-97.08

INPUT/OUTPUT CURRENT RATIO = 0.9640
INPUT/OUTPUT PHASE = -0.19 DEGREES

FIGURE 13
WYMM TOWER 1 MODEL CONVERGENCE TEST
AMENDED 5/1/17

CONVERGENCE TEST

Frequency = 1.53 MHz

number of unknowns	conductance (mhos)	susceptance (mhos)	resistance (ohms)	reactance (ohms)
source 1 of sector 1				
33	1.07E-03	5.76E-03	31.3173	-167.836
48	1.06E-03	5.69E-03	31.63	-169.827
66	1.04E-03	5.59E-03	32.3031	-172.884
84	1.04E-03	5.55E-03	32.4902	-174.122
99	1.03E-03	5.56E-03	32.2907	-173.992
114	1.03E-03	5.56E-03	32.1035	-173.868
132	1.02E-03	5.56E-03	32.0008	-173.995
150	1.02E-03	5.57E-03	31.7958	-173.745
165	1.02E-03	5.58E-03	31.622	-173.56
180	1.01E-03	5.6E-03	31.3537	-173.022