Law Office of
DENNIS J. KELLY
Post Office Box 41177
Washington, DC 20018

MEMBER, DISTRICT OF COLUMBIA BAR ONLY;
PRACTICE LIMITED TO FEDERAL COURTS AND AGENCIES

TELEPHONE: 888-322-5291
202-293-2300
TELECOPIER: 571-399-8036
E-MAIL: dkellyfcclaw1@comcast.net

May 12, 2017

Honorable Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
Washington, DC 20554

Attention: Audio Division, Media Bureau

RE: WDMC (AM), Melbourne, Florida
FCC Facility ID #68615
Divine Mercy Communications, Inc.
FRN # 0017-5911-57
FCC Form 302-AM Application
PROGRAM TEST AUTHORITY REQUESTED

Dear Madame Secretary:

On behalf of our client Divine Mercy Communications, Inc., the licensee of AM Broadcast Station WDMC, Melbourne, Florida there is transmitted herewith in triplicate an application on FCC Form 302-AM for covering license for the changes to WDMC's facilities authorized in File No. BP-20140311ADU.

The applicant hereby requests that the Commission grant program test authority as soon as possible.

As WDMC is owned by a non-profit entity and is operated non-commercially, this application is non-feeable pursuant to Section 1.1116(c) of the Commission's Rules.

Should additional information be desired in connection with the above matter, kindly communicate with this office.

Very truly yours,

Dennis J. Kelly

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. BL-20170512BCQ

SECTION I - APPLICANT FEE INFORMATION

Accepted / Filed
MAY 12 2017
Federal Communications Commission
Office of the Secretary

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

DIVINE MERCY COMMUNICATIONS, INC. FRN: 0017-5911-57

MAILING ADDRESS (Line 1) (Maximum 35 characters)
2020 W. EAU GALLIE BLVD., SUITE 103

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
MELBOURNE	FL	32935

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
(321)757-7717	WDMC	68615

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 DIVINE MERCY COMMUNICATIONS, INC.		
MAILING ADDRESS 2020 W. EAU GALLIE BLVD., SUITE 103		
CITY MELBOURNE	STATE FL	ZIP CODE 32935

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
WDMC	Melbourne, Florida	BP - 20140311ADU	n/a	12/23/2017

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. II-3

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	
Robert Groppe	Robert M. Gruppe	
Title	Date	Telephone Number
President	05/12/2017	(321) 757-7717

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

DIVINE MERCY COMMUNICATIONS, INC.

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☑ Station License ☐ Direct Measurement of Power **Moment Method Proof**

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
WDMC	BP-20140311ADU	920 kHz	UNLIMITED	4.0 kW	8.0 kW

2. Station location

State	City or Town
Florida	Melbourne

3. Transmitter location

State	County	City or Town	Street address (or other identification)
Florida	Brevard County	Melbourne	5700 W. Eau Gallie Blvd.

4. Main studio location

State	County	City or Town	Street address (or other identification)
Florida	Brevard County	Melbourne	2020 W. Eau Gallie Blvd. Suite 103

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

State	County	City or Town	Street address (or other identification)
Florida	Brevard County	Melbourne	2020 W. Eau Gallie Blvd. Suite 103

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. 3.10

8. Operating constants:

RF common point or antenna current (in amperes) without modulation for night system 9.30 Amperes Twr.3 Dummy load=0.25Amps

RF common point or antenna current (in amperes) without modulation for day system 12.98 Amperes

Measured antenna or common point resistance (in ohms) at operating frequency T3 Dummy load=50.0 Ohms
Night 50.0 Ohms Day 50.0 Ohms

Measured antenna or common point reactance (in ohms) at operating frequency T3 Dummy load=+j0.0 Ohms
Night +j 0.0 Ohms Day +j 0.0 Ohms

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
T1 (W)	159.5°	0.0°	0.622	1.000	N/A	N/A
T2 (C)	0.0°	-81.1°	1.000	0.848	N/A	N/A
T3 (E)	-161.1°		0.467		N/A	

Manufacturer and type of antenna monitor: Potomac Instruments AM-1901

SECTION III - Page 2

9. Description of antenna system ((f directional antenna is used, the information requested below should be given for each element of the array. Use separate sheets if necessary.)

Type Radiator	Overall height in meters of radiator above base insulator, or above base, if grounded.	Overall height in meters above ground (without obstruction lighting)	Overall height in meters above ground (include obstruction lighting)	If antenna is either top loaded or sectionalized, describe fully in an Exhibit.
Guyed uniform cross-section steel towers mounted on concrete base piers and insulators	All 3 towers: 59.0 M	All 3 towers: 60.7 M	All 3 Towers: 60.7 M	Exhibit No. 1.14 & Discussion

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 Day = 28-07-15 West Longitude Day = 80-43-12

North Latitude					West Longitude				
28	o	07	'	15 Night	80	o	43	'	10 Night

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. Discussion

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

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

Form 302 & moment method antenna proof of performance have been filed in response to build out of day and night array as authorized in BP-20140311ADU.

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

With move to new location and new array design, day and night common point resistance is now 50 ohms with common point reactance of +j 0.0 ohms.

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)
Richard P. Grzebik	Richard P Grzebik
Address (include ZIP Code)	Date
Munn-Reese P.O. Box 220 Coldwater, MI 49036	May 3, 2017
	Telephone No. (Include Area Code) (517) 278-7339

☐ Technical Director

☐ Registered Professional Engineer

☐ Chief Operator

☑ Technical Consultant

☐ Other (specify)

As a station with a licensed directional operation, WDMC is operating at its new directional antenna system with 5 kW daytime power and 1 kW nighttime power pursuant to Section 73.1615(b)(6) until the FCC grants program test authority.

ENGINEERING REPORT

LICENSE TO COVER
Construction Permit

BP-20140311ADU

WDMC(AM) – Melbourne, FL
920 kHz – Facility ID # 68615

May 2017

MUNN-REESE
Broadcast Engineering Consultants
Coldwater, MI 49036

Table of Contents

CERTIFICATION OF ENGINEERS

The firm of Munn-Reese, Broadcast Engineering Consultants, with offices at 385 Airport Drive, Coldwater, Michigan, has been retained for the purpose of preparing the technical data forming this report.

Some of the data utilized in this report was taken from the FCC Secondary Database and data on file. While this information is believed accurate, errors or omissions in the database and file data are possible. This firm may not be held liable for damages as a result of such data errors or omissions. Other data utilized in this report is based on field measurements and/or observations made by the undersigned, or others under the supervision of the undersigned.

The report has been prepared by properly trained electronics specialists under the direction of the undersigned whose qualifications are a matter of record before the Federal Communications Commission.

I declare under penalty of the laws of perjury that the contents of this report are true and accurate to the best of my knowledge and belief.

May 3, 2017

MUNN-REESE
385 Airport Drive, PO Box 220
Coldwater, Michigan 49036
Telephone: 517-278-7339

By _____
Richard Grzebik, Staff Engineer

By _____
Edmond R. Trombley, Staff Engineer

By _____
Donald J. Baad, Staff Engineer

Discussion of Report

The firm of Munn-Reese, Coldwater, MI, was retained to prepare an Antenna Proof of Performance under the Moment Method rules found in §73.151(c). This report supplies technical support for a license application to cover a daytime and nighttime Construction Permit for WDMC, Melbourne, FL (Facility ID # 68615). The Construction Permit, File No. BP-20140311ADU, authorizes a daytime move to a new location and a power increase to 8.0 kW using a two tower directional antenna system. This same Construction Permit also authorizes a nighttime move to the same new location as the daytime array, with a nighttime power increase to 4.0 kW using a three tower directional antenna system.

Self-impedance measurements were made at each tower with the other towers "floating" in an open circuit configuration as set forth in §73.151(c)(1). Measurements were made using an HP 8753C Network Analyzer with the Tunwall Radio Directional Couplers designed for AM measurements. The measurements were made at the output jack of each ATU. This same jack was opened to "float" the unused towers. The results of these measurements are shown in ***Exhibit 1.10***, along with the dimensions of the individual towers.

The WDMC array does not employ any isocouplers, lighting chokes or other shunt elements across the base insulators. A capacitance of approximately 50 pf was used to represent the base insulator and any stray capacitance near each tower base. At 920 kHz, this capacitance can be modeled by a shunt reactance of –j 3460 ohms.

Individual printouts from Mininec Broadcast Professional, Version 14.5, are shown for the modeling of each tower in ***Exhibits 1.11 - 1.13***. The base impedance predicted by the Mininec software was adjusted by first combining the predicted base impedance with the assumed parallel shunt reactance and then adding the assumed series reactance to represent the series path between the base of the tower and the ATU output jack. The results of these calculations are shown in the "Adjusted Model" columns of ***Exhibit 1.10***. The circuit diagram and formulas used to calculate these adjusted values are shown at the end of the exhibit.

The predicted self impedance values were calibrated by altering the tower dimensions of the model within the limitations described in §73.151(c)(1)(i)-(ix). The "Model Check" portion of ***Exhibit 1.10*** confirms that each adjusted model is within the dimensional limitations. These cells are conditionally formatted to show green when the dimensions are within the limits and red when the limits are exceeded. The model for each tower was adjusted until the base resistance and reactance predicted by the moment method software adjusted for the assumed shunt and series reactance matched the measured data within the ±2 ohms and ±4 percent specified in §73.151(c)(2)(ii). The resulting values are shown in the "Adjusted Model" columns of ***Exhibit 1.10***.

Discussion of Report

All three towers are top-loaded using the uppermost 27.5 feet of guy wire on the top level of guys at each tower. The top loaded section is isolated from the remainder of the guy wire using fiberglass insulators. The lower ends of the top loading wires are connected to each other to increase the effectiveness of the top loading.

Condition #5 on the WDMC(AM) Construction Permit, File No. BP-20140311ADU, specifies that the vertical current in the top-loaded towers must be shown to be equivalent to a tower 80.2° in electrical height---65.2° of steel plus 15° of top load. ***Exhibit 1.14*** shows a tabulation and plot of the current distribution computed by the Mininec Broadcast Professional software using the modeled tower for Tower 1. Also shown for comparison purposes is the sinusoidal distribution for a conventional 80.2° tower. The data has been normalized to aid with the comparison. Good correlation is shown in the tabulation and graph.

The modeled tower parameters were used, along with the theoretical field parameters, to generate predicted drive points and base parameters using the moment method software as specified in §73.151(c)(2)(i). The computed data is shown in ***Exhibit 1.20*** for the day pattern and ***Exhibit 1.30*** for the night pattern. The predicted base current and phases were adjusted to reflect the presence of the assumed shunt reactance at each tower. These adjusted values are shown in the "ATU Output" column of ***Exhibit 1.20*** and ***Exhibit 1.30***. The "ATU Output" magnitudes and phases were normalized to produce the "Mininec Model" "Ratio" and "Phase" shown in the upper middle portion of each exhibit. Supporting exhibits consisting of the array synthesis for each pattern are shown in ***Exhibit 1.21*** and ***Exhibit 1.31***, respectively. An array summary for each pattern has also been included in ***Exhibit 1.22*** and ***Exhibit 1.32***.

A post construction survey check was performed as required by §73.151(c)(1)(ix). The survey reveals that the array geometry is well within the standards allowed under the Moment Method rules clarification set forth in the October 29, 2009 Public Notice (DA 09-2340). The verification of array geometry shown in ***Exhibit 2.10*** is based on the actual diagram shown in ***Exhibit 2.11***. The survey was performed by AAL Land Surveying Services, Inc., who are registered land surveyors in the state of Florida. The location of each tower proposed in the construction permit was subtracted from the location measured by the surveyor using vector math. The magnitude of the vector error is shown in feet and meters. This distance has also been converted to electrical degrees at the carrier frequency. The analysis shows the geometry of the constructed directional arrays is well within the 1.5° tolerance specified by the Commission.

Exhibit 3.10 shows the details of the sample system. The sample lines are RFS LCF12-50JTC cable. This cable is listed with a velocity factor of 0.88. The supplied lines were specified as 820 feet. When field engineers measured the open circuit phase delay of these lines in accordance with §73.151(c)(2)(i), they found the "Maximum Deviation" between the longest and shortest lines was 0.0°. The deviation is well within limits as shown in the "before" and "after" measurements.

Discussion of Report

The open circuit impedance of each line was also measured using the procedure described in §73.151(c)(2)(i). Good agreement was found, and the measured values, shown in ***Exhibit 3.10***, are well within the two ohm tolerance.

The Delta TCT-1 current sensing transformers were removed from the ATU panels and compared using the network analyzer. The results of these measurements are also shown in ***Exhibit 3.10***. The magnitudes and phases were within the ±2 percent and ±0.5 degrees specified by the manufacturer.

As a final step, the impedance of each sample line was again measured from the antenna monitor end with the sample transformer attached at the ATU end. The results are also shown in ***Exhibit 3.10***.

The antenna monitor employed at WDMC(AM) is a Potomac Instruments, Model AM-1901. Before tuning the array, the Field Engineers checked the calibration of the antenna monitor. They used a "T" connector with equal length cables to confirm each of the inputs had a Loop of 1.0 and a Phase of 0° when fed the same signal as the reference tower. This measurement verified that the antenna monitor was operating within the manufacturers stated tolerances on all 3 channels.

Each of the arrays was tuned by the field engineers to the parameters generated by the moment method modeling software. Impedance matching at the antenna tuning units was adjusted where appropriate. The final tuning parameters, as read from the antenna monitor, are shown in the "Mininec Model" columns of ***Exhibit 1.20*** and ***Exhibit 1.30*** for the day and night patterns, respectively.

The licensed common point impedance for each pattern has been set to 50 ohms resistance and j 0 ohms reactance. This value allows the transmitter to operate with minimum reflected power.

In computer modeling of the phasing and coupling equipment design, the vendor, Kintronic Laboratories, Inc., determined the bandwidth of the nighttime system could be significantly improved by terminating the negative nighttime tower 3 in a dummy load. The design proposed increasing the input power to the common point by the amount of power dissipated in the dummy load to maintain an equivalent RMS for the proposed WDMC(AM) pattern. This methodology was originally proposed by Ron Rackley of duTreil, Lundin & Rackley, Inc. for WARM(AM) at Scranton, PA. In a letter dated May 3, 1996, the Audio Services Division authorized implementation of the plan with the condition that power be monitored at both the common point and the dummy load. A similar operation was proposed and granted by the Commission for WUFL(AM), Sterling Heights, MI and WLCM(AM), Holt, MI.

The same basic plan has been followed in the WDMC(AM) installation. Power from the negative tower is dissipated in a dummy load mounted in the Tower 3 antenna tuning unit. Both the common point current and the current to the dummy load are measured

Discussion of Report

and monitored by the remote control system. The power for the antenna system is calculated by subtracting the dummy load power from the common point power. Nominal values for the current at each location have been listed on Form 302-AM.

The impedance of the dummy load was measured by Carl Kuehn II, Contract Engineer for WDMC(AM), with an Delta Electronics OIB-1 Operating Impedance Bridge at the location where the current sample is measured and found to be 50.0 +j0.0 ohms. At the final tuning, the current into the dummy load measured 0.25 Amperes, resulting in a power at the dummy load of 3.125 watts. The current in the Common Point measured 9.30 Amperes. This resulted in a total input power of 4323.125 watts, which includes 4000 watts multiplied by 1.08 (8% for losses in the phasing and coupling equipment) plus 3.125 watts lost in the dummy load.

§73.151(c)(3) calls for the establishment of field strength measurement reference points on each radial corresponding to a pattern minimum or maximum, with at least three measurement locations. These are shown for the day pattern in ***Exhibit 4.10***, and the night pattern in ***Exhibit 4.11.*** Each point includes the measured field strength value, the distance (in km) from the array, the NAD27 geographic coordinates and a brief description of the location.

In ***Exhibit 4.10***, radial 268.5°, and ***Exhibit 4.11***, radials 215.0°, 271.5°, & 327.5°, reference point measurements were made at farther distances from the array. This was due to the lack of accessible roads for public use. Much of the area these radials run thru is undeveloped land, private farm land, lakes, and swamps. Access roads on these private properties were typically gated and had posted no trespassing signs.

The ground system consists of 120 buried copper radials, extending 70.1 meters (230 feet) in length, about the base of the tower except where shortened to terminate at property boundaries, or at transverse copper straps running midway between the towers. The material used for the radials is #10 AWG, soft drawn copper wire.

The modeling of the arrays was performed by Donald J. Baad, Staff Engineer with this office. Field tuning work was performed by and under the direction of Richard P. Grzebik and Edmond R. Trombley, Field and Staff Engineers with this office. Field strength measurement reference points were located and measured by Mr. Grzebik and Mr. Trombley.

Exhibit 1.10

Moment Method Modeling Data Summary Sheet

WDMC - Melbourne, FL

Modeling Software: Mininec Broadcast Professional - Version 14.5

Station: WDMC - Melbourne, FL

Freq (kHz) 920

Self-Impedances:
Measured

FCC Twr #	Open R	Open X	Electrical Ht (°)	Number of Faces	Face Width (in)	Equiv Radius (m)
1 - W	23.92	-14.70	65.2°	3	20	0.243
2 - C	22.06	-21.47	65.2°	3	20	0.243
3 - E	24.66	-14.89	65.2°	3	20	0.243

Model Check

FCC Twr #	Adjusted Ht(°)	Adjusted Radius(m)	Number Segments	Top Loading Length(°)	Top Loading Radius(m)
1 - W	69.0°	0.243	20	9.26	0.0048
2 - C	68.0°	0.243	20	9.26	0.0048
3 - E	69.5°	0.243	20	9.26	0.0048

v

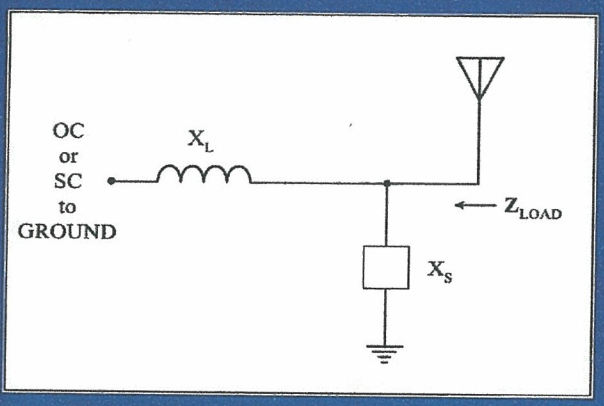
FCC Twr #	Mininec R	Mininec X	Shunt X	Series X	Adjusted Model R	Adjusted Model X
1 - W	24.42	-41.61	-3460	26.50	23.85	-14.79
2 - C	22.76	-47.23	-3460	25.50	22.15	-21.24
3 - E	24.93	-38.75	-3460	23.50	24.38	-15.00

Exhibit 1.10

Moment Method Modeling Data Summary Sheet

WDMC - Melbourne, FL

Added Series Inductance and Shunt Reactance Bases Open and Shorted



Added Series Inductance and Shunt Reactance Base Impedance Formulas

$Z_{BASE} = R_B + jX_B$

$Z_{ATU} = R_A + jX_A$

X_S = Shunt Reactance

X_L = Inductive Series Reactance

$$R_A = R_B X_S^2 / (R_B^2 + (X_B + X_S)^2)$$

$$X_A = + jX_S (R_B^2 + X_B^2 + X_B X_S)) / (R_B^2 + (X_B + X_S)^2) + jX_L$$

Munn-Reese
Broadcast Engineering Consultants
Coldwater, MI 49036

Exhibit 1.11 – Tower 1 Model

C:\Expert MININEC Broadcast Professional\Jobs\WDMC Tuneup Model 03-14-2017 12:22:47

WDMC Tower 1 (West) - Melbourne FL

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.243	20
		0	0	69.		
2	none	0	0	69.	.0048	4
		5.1	0	61.2		
3	none	0	0	69.	.0048	4
		5.1	120.	61.2		
4	none	0	0	69.	.0048	4
		5.1	240.	61.2		
5	none	5.1	0	61.2	.0048	4
		5.1	120.	61.2		
6	none	5.1	120.	61.2	.0048	4
		5.1	240.	61.2		
7	none	5.1	240.	61.2	.0048	4
		5.1	0	61.2		
8	none	78.	88.5	0	.243	20
		78.	88.5	68.		
9	none	78.	88.5	68.	.0048	4
		78.3	84.77	60.2		
10	none	78.	88.5	68.	.0048	4
		82.39	90.35	60.2		
11	none	78.	88.5	68.	.0048	4
		73.56	90.4	60.2		
12	none	78.3	84.77	60.2	.0048	4
		82.39	90.35	60.2		
13	none	82.39	90.35	60.2	.0048	4
		73.56	90.4	60.2		
14	none	73.56	90.4	60.2	.0048	4
		78.3	84.77	60.2		
15	none	169.	92.	0	.243	20
		169.	92.	69.5		
16	none	169.	92.	69.5	.0048	4
		168.9	90.27	61.7		
17	none	169.	92.	69.5	.0048	4
		173.52	92.79	61.7		
18	none	169.	92.	69.5	.0048	4
		164.7	92.94	61.7		
19	none	168.9	90.27	61.7	.0048	4
		173.52	92.79	61.7		
20	none	173.52	92.79	61.7	.0048	4
		164.7	92.94	61.7		
21	none	164.7	92.94	61.7	.0048	4
		168.9	90.27	61.7		

Number of wires = 21
current nodes = 141

Exhibit 1.11 – Tower 1 Model

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	12	2.20606	15	3.475
radius	2	4.8E-03	1	.243

ELECTRICAL DESCRIPTION
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	.92	0	1	6.13E-03	9.65E-03

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	48	0	-3,460.	0	0	0
2	95	0	-3,460.	0	0	0

C:\Expert MININEC Broadcast Professional\Jobs\WDMC Tuneup Model 03-14-2017 12:22:50

IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
.92	24.424	-41.614	48.251	300.4	3.6821	-4.8393	-1.7273

Exhibit 1.12 – Tower 2 Model

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WDMC Tower 2 (Center) - Melbourne FL

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.243	20
		0	0	69.		
2	none	0	0	69.	.0048	4
		5.1	0	61.2		
3	none	0	0	69.	.0048	4
		5.1	120.	61.2		
4	none	0	0	69.	.0048	4
		5.1	240.	61.2		
5	none	5.1	0	61.2	.0048	4
		5.1	120.	61.2		
6	none	5.1	120.	61.2	.0048	4
		5.1	240.	61.2		
7	none	5.1	240.	61.2	.0048	4
		5.1	0	61.2		
8	none	78.	88.5	0	.243	20
		78.	88.5	68.		
9	none	78.	88.5	68.	.0048	4
		78.3	84.77	60.2		
10	none	78.	88.5	68.	.0048	4
		82.39	90.35	60.2		
11	none	78.	88.5	68.	.0048	4
		73.56	90.4	60.2		
12	none	78.3	84.77	60.2	.0048	4
		82.39	90.35	60.2		
13	none	82.39	90.35	60.2	.0048	4
		73.56	90.4	60.2		
14	none	73.56	90.4	60.2	.0048	4
		78.3	84.77	60.2		
15	none	169.	92.	0	.243	20
		169.	92.	69.5		
16	none	169.	92.	69.5	.0048	4
		168.9	90.27	61.7		
17	none	169.	92.	69.5	.0048	4
		173.52	92.79	61.7		
18	none	169.	92.	69.5	.0048	4
		164.7	92.94	61.7		
19	none	168.9	90.27	61.7	.0048	4
		173.52	92.79	61.7		
20	none	173.52	92.79	61.7	.0048	4
		164.7	92.94	61.7		
21	none	164.7	92.94	61.7	.0048	4
		168.9	90.27	61.7		

Number of wires = 21
current nodes = 141

Exhibit 1.12 – Tower 2 Model

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	12	2.20606	15	3.475
radius	2	4.8E-03	1	.243

ELECTRICAL DESCRIPTION
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	.92	0	1	6.13E-03	9.65E-03

Sources

source	node	sector	magnitude	phase	type
1	48	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-3,460.	0	0	0
2	95	0	-3,460.	0	0	0

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IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 48, sector 1							
.92	22.755	-47.234	52.43	295.7	4.3854	-4.0322	-2.1837

Exhibit 1.13 – Tower 3 Model

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	12	2.20606	15	3.475
radius	2	4.8E-03	1	.243

ELECTRICAL DESCRIPTION
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	.92	0	1	6.13E-03	9.65E-03

Sources

source	node	sector	magnitude	phase	type
1	95	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-3,460.	0	0	0
2	48	0	-3,460.	0	0	0

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IMPEDANCE
normalization = 50.

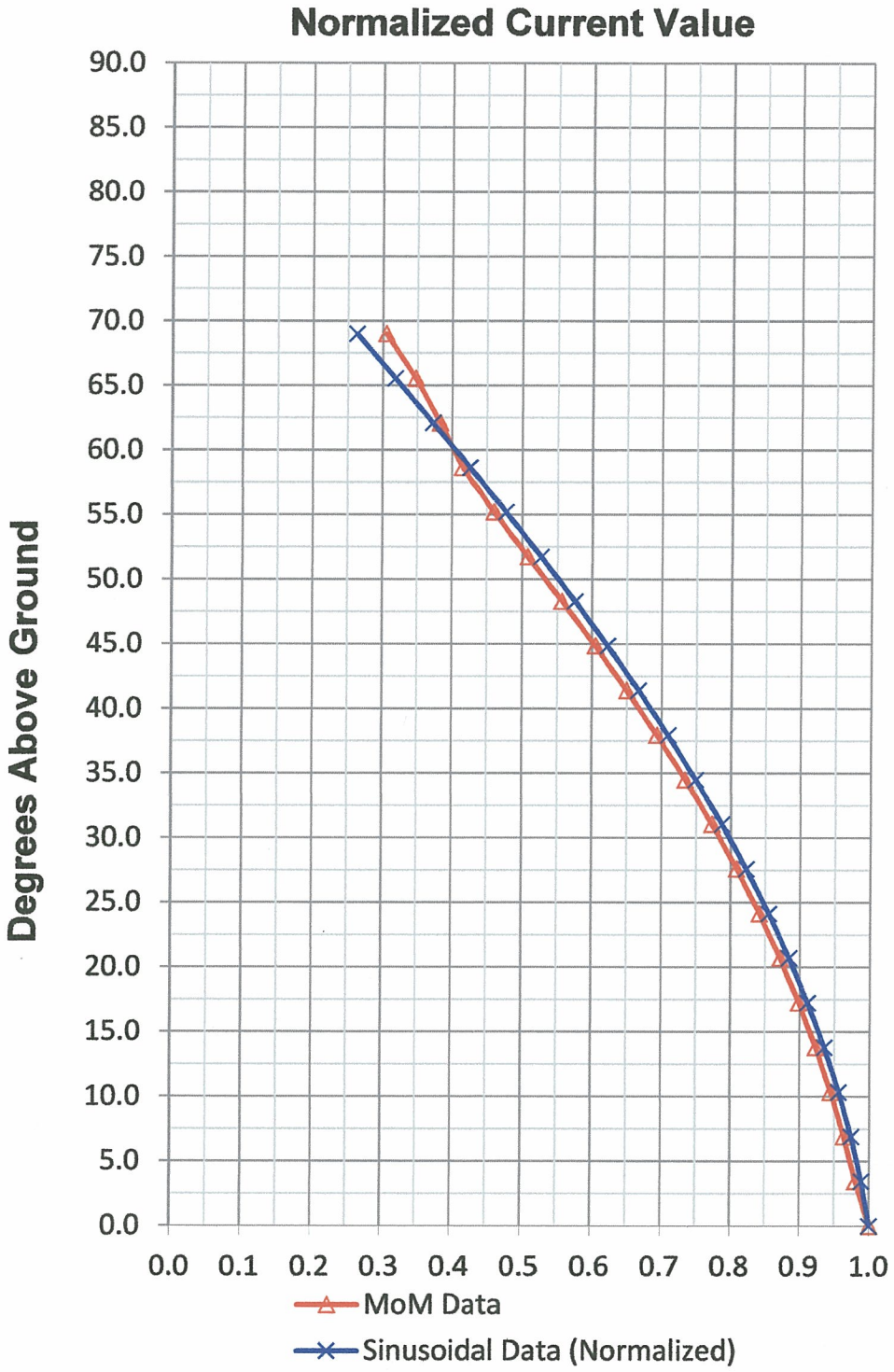
freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 95, sector 1							
.92	24.93	-38.751	46.077	302.8	3.4161	-5.2384	-1.5449

Exhibit 1.14
Modeled Vertical Current Distribution

Degrees	As Modeled		Degrees	Sinusoidal - 80.2°	
AGL	MoM Data	Normalized	AGL	Data	Normalized
0.00	0.0146546	1.0000	0.00	0.9854	1.0000
3.45	0.0143648	0.9802	3.26	0.9741	0.9886
6.90	0.0141182	0.9634	6.52	0.9597	0.9739
10.35	0.0138408	0.9445	9.78	0.9422	0.9561
13.80	0.0135252	0.9229	13.04	0.9216	0.9352
17.25	0.0131683	0.8986	16.30	0.8980	0.9113
20.70	0.0127691	0.8713	19.56	0.8716	0.8845
24.15	0.0123277	0.8412	22.82	0.8423	0.8547
27.60	0.0118448	0.8083	26.08	0.8102	0.8222
31.05	0.0113214	0.7725	29.34	0.7756	0.7871
34.50	0.0107589	0.7342	32.60	0.7385	0.7494
37.95	0.0101591	0.6932	35.86	0.6989	0.7093
41.40	0.0095200	0.6496	39.12	0.6571	0.6668
44.85	0.0088600	0.6046	42.38	0.6132	0.6223
48.30	0.0081600	0.5568	45.64	0.5673	0.5757
51.75	0.0074500	0.5084	48.90	0.5195	0.5272
55.20	0.0067400	0.4599	52.16	0.4701	0.4770
58.65	0.0060800	0.4149	55.42	0.4191	0.4253
62.10	0.0056100	0.3828	58.68	0.3668	0.3723
65.55	0.0050900	0.3473	61.94	0.3133	0.3180
69.00	0.0044700	0.3050	65.20	0.2588	0.2627

Top Loading 15.0°

Exhibit 1.14
Modeled Vertical Current Distribution



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Broadcast Engineering Consultants
Coldwater, MI

Exhibit 1.20

Moment Method Day Pattern Parameter Sheet

WDMC - Melbourne, FL

Modeling Software: Mininec Broadcast Professional - Version 14.5

Station: WDMC - Melbourne, FL

Freq (kHz) 920

Day Pattern

FCC	Field Parameters		Mininec Model		Tuning Check	
Twr #	Ratio	Phase	Ratio	Phase	Ratio	Phase
1 - W	1.000	0.0°	1.000	0.0°	*1.000*	*0.0°*
2 - C	0.880	-83.0°	0.848	-81.1°		

Mininec Model Data

FCC	Drive Point		Current		Shunt	ATU Output	
Twr #	R	X	Mag	Phase	X	Mag	Phase
1 - W	18.06	-55.99	13.2953	1.8°	-3460	13.5106	2.094°
2 - C	37.35	-31.05	11.3486	280.4°	-3460	11.4511	281.013°

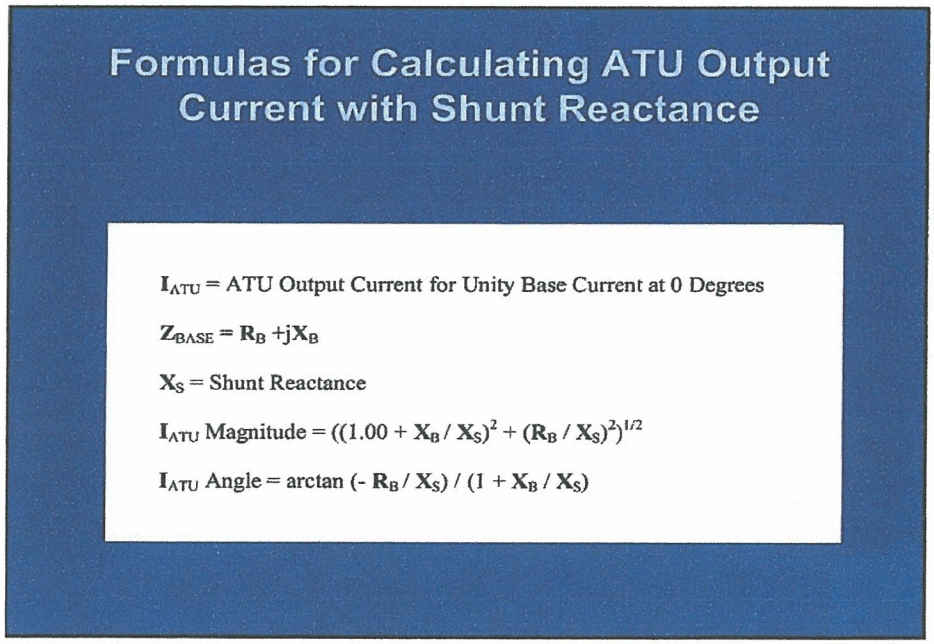

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Exhibit 1.21 – Day Pattern Synthesis

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03-14-2017 12:41:32

MEDIUM WAVE ARRAY SYNTHESIS FROM FIELD RATIOS

Frequency = .92 MHz

tower	field ratio magnitude	phase (deg)
1	1.	0
2	.88	-83.
3	0	0

VOLTAGES AND CURRENTS - rms

source node	voltage magnitude	phase (deg)	current magnitude	phase (deg)
1	782.146	289.7	13.2953	1.8
48	551.18	240.7	11.3486	280.4
95	2,355.06	248.2	.574327	338.3

Sum of square of source currents = 611.772
Total power = 8,000. watts

TOWER ADMITTANCE MATRIX

admittance	real (mhos)	imaginary (mhos)
Y(1, 1)	.00890457	.020086
Y(1, 2)	.00108379	-.0073901
Y(1, 3)	-8.077E-05	-3.5491E-05
Y(2, 1)	.00108382	-.00739009
Y(2, 2)	.00665453	.0190962
Y(2, 3)	5.072E-05	-5.9491E-05
Y(3, 1)	-8.077E-05	-3.5491E-05
Y(3, 2)	5.072E-05	-5.9492E-05
Y(3, 3)	1.97E-06	.000285837

TOWER IMPEDANCE MATRIX

impedance	real (ohms)	imaginary (ohms)
Z(1, 1)	24.4802	-41.6069
Z(1, 2)	15.1558	-9.47638
Z(1, 3)	-3.80298	-11.3928
Z(2, 1)	15.1558	-9.47645
Z(2, 2)	22.9157	-47.1897
Z(2, 3)	12.4237	-11.1291
Z(3, 1)	-3.80297	-11.3928
Z(3, 2)	12.4238	-11.129
Z(3, 3)	24.9832	-3,498.78

Exhibit 1.22 – Day Pattern Summary

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WDMC Day Array - Melbourne FL

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.243	20
		0	0	69.		
2	none	0	0	69.	.0048	4
		5.1	0	61.2		
3	none	0	0	69.	.0048	4
		5.1	120.	61.2		
4	none	0	0	69.	.0048	4
		5.1	240.	61.2		
5	none	5.1	0	61.2	.0048	4
		5.1	120.	61.2		
6	none	5.1	120.	61.2	.0048	4
		5.1	240.	61.2		
7	none	5.1	240.	61.2	.0048	4
		5.1	0	61.2		
8	none	78.	88.5	0	.243	20
		78.	88.5	68.		
9	none	78.	88.5	68.	.0048	4
		78.3	84.77	60.2		
10	none	78.	88.5	68.	.0048	4
		82.39	90.35	60.2		
11	none	78.	88.5	68.	.0048	4
		73.56	90.4	60.2		
12	none	78.3	84.77	60.2	.0048	4
		82.39	90.35	60.2		
13	none	82.39	90.35	60.2	.0048	4
		73.56	90.4	60.2		
14	none	73.56	90.4	60.2	.0048	4
		78.3	84.77	60.2		
15	none	169.	92.	0	.243	20
		169.	92.	69.5		
16	none	169.	92.	69.5	.0048	4
		168.9	90.27	61.7		
17	none	169.	92.	69.5	.0048	4
		173.52	92.79	61.7		
18	none	169.	92.	69.5	.0048	4
		164.7	92.94	61.7		
19	none	168.9	90.27	61.7	.0048	4
		173.52	92.79	61.7		
20	none	173.52	92.79	61.7	.0048	4
		164.7	92.94	61.7		
21	none	164.7	92.94	61.7	.0048	4
		168.9	90.27	61.7		

Exhibit 1.22 – Day Pattern Summary

```
Number of wires          =  21
         current nodes   =  141

                          minimum                    maximum
Individual wires       wire    value              wire   value
segment length          12     2.20606             15    3.475
radius                  2      4.8E-03             1     .243


ELECTRICAL DESCRIPTION
Frequencies (MHz)
     frequency                  no. of  segment length (wavelengths)
 no. lowest       step          steps   minimum        maximum
 1   .92          0              1      6.13E-03       9.65E-03

Sources
source node    sector  magnitude      phase          type
 1      1       1      1,106.12       289.7          voltage
 2      48      1      779.487        240.7          voltage
 3      95      1      3,330.56       248.2          voltage

Lumped loads
             resistance    reactance     inductance  capacitance passive
load  node   (ohms)        (ohms)        (mH)        (uF)        circuit
 1     95    0             -3,460.       0           0            0

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2017   12:43:09

IMPEDANCE
   normalization = 50.
freq     resist   react    imped    phase    VSWR    S11      S12
(MHz)    (ohms)   (ohms)   (ohms)   (deg)            dB       dB
source =  1; node 1, sector 1
.92      18.058   -55.988  58.829   287.9    6.4465  -2.7167  -3.3252

source =  2; node 48, sector 1
.92      37.347   -31.05   48.568   320.3    2.1333  -8.8332  -.6089

source =  3; node 95, sector 1
.92      -6.0884  -4,100.6 4,100.6  269.9    ****    ****     ****


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2017   12:43:10

CURRENT rms
Frequency   = .92 MHz
Input power = 8,000. watts
Efficiency  = 100. %
coordinates in degrees
current                              mag      phase  real      imaginary
no.    X         Y         Z         (amps)   (deg)  (amps)    (amps)
GND    0         0         0         13.2953  1.8    13.2884   .428264
```

Exhibit 1.22 – Day Pattern Summary

2	0	0	3.45	12.9506	1.4	12.9468	.31457
3	0	0	6.9	12.6772	1.1	12.6749	.243495
4	0	0	10.35	12.3852	.8	12.3838	.183053
5	0	0	13.8	12.0651	.6	12.0644	.129842
6	0	0	17.25	11.7133	.4	11.713	.0823737
7	0	0	20.7	11.3283	.2	11.3282	.0399538
8	0	0	24.15	10.9098	0.0	10.9098	2.23E-03
9	0	0	27.6	10.4582	359.8	10.4582	-.0309735
10	0	0	31.05	9.97434	359.7	9.97416	-.0597401
11	0	0	34.5	9.45941	359.5	9.45904	-.0840926
12	0	0	37.95	8.91489	359.3	8.91428	-.104022
13	0	0	41.4	8.34288	359.2	8.34202	-.1195
14	0	0	44.85	7.74597	359.	7.74487	-.130496
15	0	0	48.3	7.12846	358.9	7.12714	-.136993
16	0	0	51.75	6.49745	358.8	6.49596	-.139026
17	0	0	55.2	5.86881	358.7	5.86722	-.136797
18	0	0	58.65	5.28939	358.6	5.28776	-.131122
19	0	0	62.1	4.8779	358.5	4.87631	-.124309
20	0	0	65.55	4.42933	358.5	4.4279	-.112441
END	0	0	69.	3.88937	358.6	3.88822	-.0942545
2J1	0	0	69.	1.29662	358.6	1.29624	-.0314834
22	1.275	0	67.05	1.16895	358.7	1.16864	-.0269072
23	2.55	0	65.1	.997176	358.8	.996943	-.0215852
24	3.825	0	63.15	.810697	358.8	.810528	-.0165696
END	5.1	0	61.2	.628058	358.9	.627935	-.0124456
2J1	0	0	69.	1.28546	357.9	1.28457	-.0476675
26	-.6375	-1.10418	67.05	1.15777	357.9	1.15696	-.0433553
27	-1.275	-2.20837	65.1	.985986	357.7	.985226	-.0387217
28	-1.9125	-3.31255	63.15	.799513	357.5	.798755	-.0348104
END	-2.55	-4.41673	61.2	.616927	357.	.616089	-.0321561
2J1	0	0	69.	1.3075	359.3	1.30741	-.0151037
30	-.6375	1.10418	67.05	1.17987	359.5	1.17983	-.0102405
31	-1.275	2.20837	65.1	1.00818	359.8	1.00817	-4.2E-03
32	-1.9125	3.31255	63.15	.82183	.1	.821828	1.92E-03
END	-2.55	4.41673	61.2	.639386	.7	.639343	7.44E-03
2J2	5.1	0	61.2	.317622	.5	.317611	2.62E-03
34	3.1875	-1.10418	61.2	.156175	2.	.156077	5.52E-03
35	1.275	-2.20837	61.2	8.66E-03	65.1	3.64E-03	7.85E-03
36	-.6375	-3.31255	61.2	.149131	176.2	-.14881	9.79E-03
END	-2.55	-4.41673	61.2	.31062	177.9	-.310404	.011564
2J3	-2.55	-4.41673	61.2	.306377	356.1	.305684	-.0205922
39	-2.55	-2.20837	61.2	.145286	352.7	.144105	-.0184914
40	-2.55	0	61.2	.0178306	242.2	-8.31E-03	-.0157778
41	-2.55	2.20837	61.2	.161136	184.4	-.160665	-.0123172
END	-2.55	4.41673	61.2	.322196	181.4	-.322095	-8.07E-03
2J4	-2.55	4.41673	61.2	.317249	359.9	.317248	-6.26E-04
44	-.6375	3.31255	61.2	.15588	1.4	.155832	3.85E-03
45	1.275	2.20837	61.2	8.66E-03	66.	3.52E-03	7.92E-03
46	3.1875	1.10418	61.2	.149277	175.5	-.148824	.0116243
END	5.1	0	61.2	.310689	177.2	-.310324	.015068
GND	2.0418	-77.9733	0	11.3486	280.4	2.0488	-11.1621
49	2.0418	-77.9733	3.4	11.1775	279.5	1.8414	-11.0248
50	2.0418	-77.9733	6.8	11.0203	278.9	1.7071	-10.8873
51	2.0418	-77.9733	10.2	10.8338	278.4	1.58772	-10.7168

Exhibit 1.22 – Day Pattern Summary

52	2.0418	-77.9733	13.6	10.6139	278.	1.4771	-10.5106
53	2.0418	-77.9733	17.	10.3587	277.6	1.37249	-10.2673
54	2.0418	-77.9733	20.4	10.0677	277.3	1.27256	-9.98696
55	2.0418	-77.9733	23.8	9.74121	276.9	1.17661	-9.66989
56	2.0418	-77.9733	27.2	9.37964	276.6	1.08424	-9.31677
57	2.0418	-77.9733	30.6	8.98393	276.4	.995238	-8.92863
58	2.0418	-77.9733	34.	8.55497	276.1	.909473	-8.50649
59	2.0418	-77.9733	37.4	8.09438	275.9	.826919	-8.05203
60	2.0418	-77.9733	40.8	7.60387	275.6	.747603	-7.56703
61	2.0418	-77.9733	44.2	7.08602	275.4	.671631	-7.05412
62	2.0418	-77.9733	47.6	6.54456	275.3	.59925	-6.51706
63	2.0418	-77.9733	51.	5.9863	275.1	.530978	-5.9627
64	2.0418	-77.9733	54.4	5.42625	274.9	.468093	-5.40602
65	2.0418	-77.9733	57.8	4.90931	274.8	.414573	-4.89177
66	2.0418	-77.9733	61.2	4.54031	274.8	.379767	-4.5244
67	2.0418	-77.9733	64.6	4.12474	274.8	.345659	-4.11023
END	2.0418	-77.9733	68.	3.62213	274.9	.308637	-3.60896
2J8	2.0418	-77.9733	68.	1.20155	274.8	.101487	-1.19726
69	3.31569	-77.9735	66.05	1.08099	274.9	.0928678	-1.07699
70	4.58958	-77.9737	64.1	.919579	275.	.0804164	-.916057
71	5.86347	-77.9738	62.15	.745291	275.1	.0660815	-.742356
END	7.13736	-77.974	60.2	.575597	275.1	.0511527	-.573319
2J8	2.0418	-77.9733	68.	1.19352	274.2	.0864777	-1.19038
73	1.40553	-79.0771	66.05	1.07286	274.1	.0775653	-1.07005
74	.769254	-80.1809	64.1	.911277	274.1	.0643869	-.909
75	.132982	-81.2847	62.15	.736721	273.8	.0489361	-.735094
END	-.50329	-82.3885	60.2	.566705	273.3	.0325997	-.565767
2J8	2.0418	-77.9733	68.	1.22727	275.6	.120673	-1.22132
77	1.40296	-76.8695	66.05	1.10669	275.8	.112366	-1.10097
78	.764126	-75.7657	64.1	.945503	276.1	.10075	-.940119
79	.12529	-74.662	62.15	.771581	276.5	.0877548	-.766574
END	-.513547	-73.5582	60.2	.602439	277.1	.0746112	-.597801
2J9	7.13736	-77.974	60.2	.294988	276.8	.0350291	-.292901
81	5.2272	-79.0776	60.2	.145573	278.3	.0210373	-.144045
82	3.31704	-80.1812	60.2	8.2E-03	335.6	7.47E-03	-3.39E-03
83	1.40687	-81.2849	60.2	.137504	92.7	-6.47E-03	.137352
END	-.50329	-82.3885	60.2	.287205	94.3	-.0214959	.286399
2J10	-.50329	-82.3885	60.2	.279588	272.3	.0111038	-.279367
86	-.505854	-80.1809	60.2	.130299	268.4	-3.66E-03	-.130248
87	-.508418	-77.9733	60.2	.0198355	148.3	-.0168697	.0104336
88	-.510983	-75.7658	60.2	.153798	101.	-.029249	.150991
END	-.513547	-73.5582	60.2	.302556	97.9	-.0416227	.29968
2J11	-.513547	-73.5582	60.2	.299941	276.3	.0329885	-.298121
91	1.39918	-74.6622	60.2	.150897	278.	.0209412	-.149436
92	3.31191	-75.7661	60.2	.0129668	316.1	9.35E-03	-8.98E-03
93	5.22463	-76.8701	60.2	.131543	91.2	-2.71E-03	.131516
END	7.13736	-77.974	60.2	.280881	93.3	-.0161237	.280418
GND	-5.89802	-168.897	0	.574326	338.3	.533588	-.21245
96	-5.89802	-168.897	3.475	.415589	338.5	.386637	-.152403
97	-5.89802	-168.897	6.95	.317092	338.7	.295379	-.115319
98	-5.89802	-168.897	10.425	.234185	338.9	.218494	-.0842807
99	-5.89802	-168.897	13.9	.162065	339.2	.151537	-.0574588
100	-5.89802	-168.897	17.375	.0985841	339.8	.0925263	-.0340251
101	-5.89802	-168.897	20.85	.0427074	341.5	.0404961	-.013564

Exhibit 1.22 – Day Pattern Summary

102	-5.89802	-168.897	24.325	6.58E-03	140.7	-5.09E-03	4.17E-03
103	-5.89802	-168.897	27.8	.0485782	156.5	-.0445637	.0193369
104	-5.89802	-168.897	31.275	.0844538	157.7	-.0781332	.032057
105	-5.89802	-168.897	34.75	.114128	158.2	-.10595	.0424246
106	-5.89802	-168.897	38.225	.137731	158.5	-.12813	.0505227
107	-5.89802	-168.897	41.7	.155381	158.7	-.144772	.0564292
108	-5.89802	-168.897	45.175	.167199	158.9	-.155977	.0602223
109	-5.89802	-168.897	48.65	.17333	159.	-.161866	.0619883
110	-5.89802	-168.897	52.125	.173983	159.2	-.162623	.0618372
111	-5.89802	-168.897	55.6	.169576	159.3	-.158625	.0599513
112	-5.89802	-168.897	59.075	.161295	159.4	-.150969	.0567861
113	-5.89802	-168.897	62.55	.152285	159.4	-.142581	.0534922
114	-5.89802	-168.897	66.025	.137754	159.4	-.128981	.048375
END	-5.89802	-168.897	69.5	.116125	159.4	-.10869	.0408854
2J15	-5.89802	-168.897	69.5	.0395676	161.7	-.0375716	.0124085
116	-4.6225	-168.897	67.55	.034204	162.	-.0325368	.0105486
117	-3.34697	-168.898	65.6	.0278368	162.7	-.0265736	8.29E-03
118	-2.07144	-168.898	63.65	.0217323	163.8	-.0208649	6.08E-03
END	-.795917	-168.898	61.7	.0166261	165.4	-.0160919	4.18E-03
2J15	-5.89802	-168.897	69.5	.044075	113.3	-.0174539	.0404717
120	-6.53506	-170.001	67.55	.0408752	107.7	-.0124413	.0389358
121	-7.1721	-171.106	65.6	.038051	99.9	-6.52E-03	.0374876
122	-7.80914	-172.21	63.65	.0365355	91.4	-8.64E-04	.0365252
END	-8.44617	-173.314	61.7	.0364254	83.9	3.88E-03	.0362181
2J15	-5.89802	-168.897	69.5	.0549883	192.6	-.0536641	-.0119948
124	-6.53539	-167.794	67.55	.0506144	196.2	-.0486098	-.0141032
125	-7.17276	-166.69	65.6	.0458644	201.8	-.0425951	-.0170059
126	-7.81013	-165.587	63.65	.0420066	208.8	-.0368061	-.020245
END	-8.4475	-164.483	61.7	.039657	216.3	-.0319414	-.0235037
2J16	-.795917	-168.898	61.7	.0170838	215.8	-.0138547	-1.E-02
128	-2.70848	-170.002	61.7	.0151124	228.	-.0101205	-.0112232
129	-4.62105	-171.106	61.7	.0136241	241.3	-6.55E-03	-.0119449
130	-6.53361	-172.21	61.7	.0126119	256.3	-2.99E-03	-.0122535
END	-8.44617	-173.314	61.7	.0123231	273.5	7.44E-04	-.0123006
2J17	-8.44617	-173.314	61.7	.0243605	79.1	4.62E-03	.0239175
133	-8.44651	-171.107	61.7	.0250811	70.5	8.36E-03	.023648
134	-8.44684	-168.899	61.7	.0256986	62.3	.0119404	.0227562
135	-8.44717	-166.691	61.7	.0262016	53.6	.0155454	.0210919
END	-8.4475	-164.483	61.7	.026845	43.9	.0193464	.018611
2J18	-8.4475	-164.483	61.7	.0135119	201.2	-.0125949	-4.89E-03
138	-6.53461	-165.587	61.7	.0116897	221.3	-8.78E-03	-7.72E-03
139	-4.62171	-166.691	61.7	.0114497	243.4	-5.14E-03	-.0102334
140	-2.70881	-167.794	61.7	.0124756	263.	-1.52E-03	-.012383
END	-.795917	-168.898	61.7	.0143512	279.	2.24E-03	-.0141757

Exhibit 1.30

Moment Method Night Pattern Parameter Sheet

WDMC - Melbourne, FL

Modeling Software: Mininec Broadcast Professional - Version 14.5

Station: WDMC - Melbourne, FL

Freq (kHz) 920

Night Pattern

	Field Parameters		Mininec Model		Tuning Check	
Twr	Ratio	Phase	Ratio	Phase	Ratio	Phase
1 - W	0.618	160.5°	0.622	159.5°		
2 - C	1.000	0.0°	1.000	0.0°		
3 - E	0.494	-159.5°	0.467	-161.1°		

Mininec Model Data

	Drive Point		Current		Shunt	ATU Output	
Twr	R	X	Mag	Phase	X	Mag	Phase
1 - W	-0.49	-44.27	14.3399	160.5°	-3460	14.5234	160.492°
2 - C	8.92	-35.38	23.1281	0.8°	-3460	23.3647	0.946°
3 - E	-5.67	-16.16	10.8678	199.9°	-3460	10.9186	199.807°

Formulas for Calculating ATU Output Current with Shunt Reactance

I_{ATU} = ATU Output Current for Unity Base Current at 0 Degrees

$Z_{BASE} = R_B + jX_B$

X_S = Shunt Reactance

I_{ATU} Magnitude = $((1.00 + X_B / X_S)^2 + (R_B / X_S)^2)^{1/2}$

I_{ATU} Angle = $\arctan(- R_B / X_S) / (1 + X_B / X_S)$

Munn-Reese
Broadcast Engineering Consultants
Coldwater, MI 49036

Exhibit 1.31 – Night Pattern Synthesis

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MEDIUM WAVE NIGHT ARRAY SYNTHESIS FROM FIELD RATIOS

Frequency = .92 MHz

tower	field ratio magnitude	phase (deg)
1	.618	160.5
2	1.	0
3	.494	-159.5

VOLTAGES AND CURRENTS - rms

source node	voltage magnitude	phase (deg)	current magnitude	phase (deg)
1	634.898	69.9	14.34	160.5
48	843.959	285.	23.1281	.8
95	186.139	90.6	10.8678	199.9

Sum of square of source currents = 1,717.31
Total power = 4,000. watts

TOWER ADMITTANCE MATRIX

admittance	real (mhos)	imaginary (mhos)
Y(1, 1)	.00946638	.0180828
Y(1, 2)	.0026405	-.00640239
Y(1, 3)	-.00674846	.000955012
Y(2, 1)	.00264052	-.00640237
Y(2, 2)	.00541927	.0201654
Y(2, 3)	.000910839	-.00597055
Y(3, 1)	-.00674846	.000955017
Y(3, 2)	.000910791	-.00597056
Y(3, 3)	.0117579	.0186923

TOWER IMPEDANCE MATRIX

impedance	real (ohms)	imaginary (ohms)
Z(1, 1)	24.4802	-41.6069
Z(1, 2)	15.1557	-9.47639
Z(1, 3)	-3.80298	-11.3929
Z(2, 1)	15.1557	-9.47645
Z(2, 2)	22.9156	-47.1896
Z(2, 3)	12.4237	-11.1291
Z(3, 1)	-3.80297	-11.3928
Z(3, 2)	12.4238	-11.129
Z(3, 3)	24.9835	-38.7771

Exhibit 1.32 – Night Pattern Summary

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WDMC Night Array - Melbourne FL

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.243	20
		0	0	69.		
2	none	0	0	69.	.0048	4
		5.1	0	61.2		
3	none	0	0	69.	.0048	4
		5.1	120.	61.2		
4	none	0	0	69.	.0048	4
		5.1	240.	61.2		
5	none	5.1	0	61.2	.0048	4
		5.1	120.	61.2		
6	none	5.1	120.	61.2	.0048	4
		5.1	240.	61.2		
7	none	5.1	240.	61.2	.0048	4
		5.1	0	61.2		
8	none	78.	88.5	0	.243	20
		78.	88.5	68.		
9	none	78.	88.5	68.	.0048	4
		78.3	84.77	60.2		
10	none	78.	88.5	68.	.0048	4
		82.39	90.35	60.2		
11	none	78.	88.5	68.	.0048	4
		73.56	90.4	60.2		
12	none	78.3	84.77	60.2	.0048	4
		82.39	90.35	60.2		
13	none	82.39	90.35	60.2	.0048	4
		73.56	90.4	60.2		
14	none	73.56	90.4	60.2	.0048	4
		78.3	84.77	60.2		
15	none	169.	92.	0	.243	20
		169.	92.	69.5		
16	none	169.	92.	69.5	.0048	4
		168.9	90.27	61.7		
17	none	169.	92.	69.5	.0048	4
		173.52	92.79	61.7		
18	none	169.	92.	69.5	.0048	4
		164.7	92.94	61.7		
19	none	168.9	90.27	61.7	.0048	4
		173.52	92.79	61.7		
20	none	173.52	92.79	61.7	.0048	4
		164.7	92.94	61.7		
21	none	164.7	92.94	61.7	.0048	4
		168.9	90.27	61.7		

Number of wires = 21
current nodes = 141

Exhibit 1.32 – Night Pattern Summary

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	12	2.20606	15	3.475
radius	2	4.8E-03	1	.243

ELECTRICAL DESCRIPTION
Frequencies (MHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	.92	0	1	6.13E-03	9.65E-03

Sources

source	node	sector	magnitude	phase	type
1	1	1	897.882	69.9	voltage
2	48	1	1,193.54	285.	voltage
3	95	1	263.24	90.6	voltage

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IMPEDANCE
normalization = 50.

freq (MHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
.92	-.49108	-44.272	44.275	269.4	****	****	****
source = 2; node 48, sector 1							
.92	8.9191	-35.384	36.491	284.1	8.4738	-2.0596	-4.2291
source = 3; node 95, sector 1							
.92	-5.6719	-16.161	17.128	250.7	****	****	****

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CURRENT rms
Frequency = .92 MHz
Input power = 4,000. watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	14.3399	160.5	-13.5168	4.78861
2	0	0	3.45	14.039	160.5	-13.2341	4.68538
3	0	0	6.9	13.7856	160.5	-12.9957	4.59938
4	0	0	10.35	13.5031	160.5	-12.7297	4.50417
5	0	0	13.8	13.1837	160.5	-12.4288	4.39709
6	0	0	17.25	12.8245	160.5	-12.0903	4.27707
7	0	0	20.7	12.4247	160.5	-11.7133	4.14377
8	0	0	24.15	11.9842	160.5	-11.2979	3.99719
9	0	0	27.6	11.5039	160.5	-10.845	3.83752

Exhibit 1.32 – Night Pattern Summary

10	0	0	31.05	10.9849	160.5	-10.3554	3.66511
11	0	0	34.5	10.4288	160.5	-9.83091	3.48042
12	0	0	37.95	9.83756	160.5	-9.27321	3.28407
13	0	0	41.4	9.2136	160.5	-8.68469	3.07679
14	0	0	44.85	8.56015	160.5	-8.06837	2.85965
15	0	0	48.3	7.88212	160.5	-7.42894	2.63415
16	0	0	51.75	7.18759	160.5	-6.77399	2.40301
17	0	0	55.2	6.49437	160.5	-6.12036	2.17208
18	0	0	58.65	5.85448	160.5	-5.51711	1.95869
19	0	0	62.1	5.39948	160.5	-5.08822	1.80676
20	0	0	65.55	4.90283	160.5	-4.62021	1.64055
END	0	0	69.	4.3046	160.5	-4.05661	1.43997
2J1	0	0	69.	1.4348	160.5	-1.35252	.478891
22	1.275	0	67.05	1.29332	160.5	-1.21924	.431428
23	2.55	0	65.1	1.10304	160.5	-1.03996	.367667
24	3.825	0	63.15	.896547	160.5	-.845382	.298541
END	5.1	0	61.2	.694455	160.6	-.654931	.23094
2J1	0	0	69.	1.40153	160.6	-1.32163	.466454
26	-.6375	-1.10418	67.05	1.25961	160.6	-1.1879	.418943
27	-1.275	-2.20837	65.1	1.06815	160.6	-1.00741	.355057
28	-1.9125	-3.31255	63.15	.859771	160.6	-.810903	.285731
END	-2.55	-4.41673	61.2	.655147	160.6	-.617862	.217862
2J1	0	0	69.	1.46829	160.3	-1.38247	.494626
30	-.6375	1.10418	67.05	1.32731	160.3	-1.2497	.447225
31	-1.275	2.20837	65.1	1.13829	160.3	-1.0717	.383625
32	-1.9125	3.31255	63.15	.933746	160.3	-.879097	.314757
END	-2.55	4.41673	61.2	.73413	160.3	-.691152	.247499
2J2	5.1	0	61.2	.363895	160.6	-.343276	.120752
34	3.1875	-1.10418	61.2	.184734	160.7	-.174385	.0609639
35	1.275	-2.20837	61.2	.0148923	162.6	-.014209	4.46E-03
36	-.6375	-3.31255	61.2	.155643	340.4	.146658	-.0521177
END	-2.55	-4.41673	61.2	.336747	340.6	.317536	-.112113
2J3	-2.55	-4.41673	61.2	.3184	160.6	-.300326	.105749
39	-2.55	-2.20837	61.2	.137872	160.6	-.130035	.045821
40	-2.55	0	61.2	.0312707	340.2	.0294247	-.0105851
41	-2.55	2.20837	61.2	.199104	340.4	.187554	-.0668271
END	-2.55	4.41673	61.2	.375865	340.4	.354015	-.126284
2J4	-2.55	4.41673	61.2	.358266	160.2	-.337137	.121215
44	-.6375	3.31255	61.2	.181885	160.1	-.171063	.061805
45	1.275	2.20837	61.2	.0151024	157.9	-.0139898	5.69E-03
46	3.1875	1.10418	61.2	.15235	340.6	.14373	-.0505176
END	5.1	0	61.2	.330561	340.5	.311655	-.110189
GND	2.0418	-77.9733	0	23.1281	.8	23.1257	.337018
49	2.0418	-77.9733	3.4	22.734	.6	22.7326	.243993
50	2.0418	-77.9733	6.8	22.3826	.5	22.3818	.186463
51	2.0418	-77.9733	10.2	21.9751	.4	21.9746	.138008
52	2.0418	-77.9733	13.6	21.5018	.3	21.5016	.0958144
53	2.0418	-77.9733	17.	20.9589	.2	20.9589	.0586242
54	2.0418	-77.9733	20.4	20.3458	.1	20.3457	.02582
55	2.0418	-77.9733	23.8	19.6625	360.	19.6625	-2.94E-03
56	2.0418	-77.9733	27.2	18.9103	359.9	18.9103	-.0278686
57	2.0418	-77.9733	30.6	18.0913	359.8	18.0913	-.0490968
58	2.0418	-77.9733	34.	17.2078	359.8	17.2077	-.0667202
59	2.0418	-77.9733	37.4	16.2628	359.7	16.2626	-.0808103
60	2.0418	-77.9733	40.8	15.2604	359.7	15.2602	-.0914261

Exhibit 1.32 – Night Pattern Summary

112	-5.89802	-168.897	59.075	4.78193	200.9	-4.46737	-1.7057
113	-5.89802	-168.897	62.55	4.40923	200.9	-4.11888	-1.57357
114	-5.89802	-168.897	66.025	4.00197	200.9	-3.73847	-1.42814
END	-5.89802	-168.897	69.5	3.50635	200.9	-3.27589	-1.25022
2J15	-5.89802	-168.897	69.5	1.16266	201.	-1.08519	-.417305
116	-4.6225	-168.897	67.55	1.04585	201.	-.976182	-.375321
117	-3.34697	-168.898	65.6	.889541	201.	-.830235	-.319361
118	-2.07144	-168.898	63.65	.720695	201.1	-.672504	-.259113
END	-.795917	-168.898	61.7	.556222	201.1	-.518777	-.200632
2J15	-5.89802	-168.897	69.5	1.18981	199.5	-1.12171	-.396776
120	-6.53506	-170.001	67.55	1.07353	199.3	-1.01321	-.354783
121	-7.1721	-171.106	65.6	.918416	199.	-.868462	-.298768
122	-7.80914	-172.21	63.65	.751382	198.5	-.712559	-.238402
END	-8.44617	-173.314	61.7	.589215	197.8	-.561132	-.179735
2J15	-5.89802	-168.897	69.5	1.15454	202.2	-1.069	-.436137
124	-6.53539	-167.794	67.55	1.03753	202.3	-.959728	-.394189
125	-7.17276	-166.69	65.6	.880641	202.6	-.813067	-.338306
126	-7.81013	-165.587	63.65	.710734	203.	-.654051	-.278137
END	-8.4475	-164.483	61.7	.544865	203.8	-.498582	-.21976
2J16	-.795917	-168.898	61.7	.268869	203.5	-.246517	-.10733
128	-2.70848	-170.002	61.7	.124605	206.6	-.111379	-.055868
129	-4.62105	-171.106	61.7	.0170972	334.9	.015488	-7.24E-03
130	-6.53361	-172.21	61.7	.147689	16.3	.141757	.0414392
END	-8.44617	-173.314	61.7	.2905	18.7	.275193	.0930546
2J17	-8.44617	-173.314	61.7	.298789	196.9	-.285939	-.08668
133	-8.44651	-171.107	61.7	.156254	193.	-.15226	-.0351018
134	-8.44684	-168.899	61.7	.0286825	151.9	-.0253062	.0135014
135	-8.44717	-166.691	61.7	.119977	31.1	.102704	.0620196
END	-8.4475	-164.483	61.7	.264926	25.3	.239443	.113372
2J18	-8.4475	-164.483	61.7	.280128	202.3	-.259139	-.106388
138	-6.53461	-165.587	61.7	.13369	204.3	-.121831	-.0550467
139	-4.62171	-166.691	61.7	9.97E-03	318.6	7.48E-03	-6.59E-03
140	-2.70881	-167.794	61.7	.142627	17.1	.136334	.0418963
END	-.795917	-168.898	61.7	.287803	18.9	.27226	.0933028

Exhibit 2.10 - Post Construction Verification of Array Geometry

Station: WDMC - Melbourne, FL

Freq: 920

	Authorized Geometry				Verified Geometry*			Distance from Authorized Location		
Tower	Spacing (Elec°)	Spacing (ft)	Spacing (m)	Azimuth (° T)	Spacing (ft)	Spacing (m)	Azimuth (° T)	(ft)	(m)	(Elec°)
1 - W	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref	Ref
2 - C	78°	231.64	70.6	88.5°	231.51	70.6	88.48°	0.14	0.0	***0.0°***
3 - E	169°	501.88	153.0	92.0°	501.65	152.9	92.00°	0.24	0.1	***0.1°***

* From "As Built" Survey by AAL Land Survey Services, Inc.

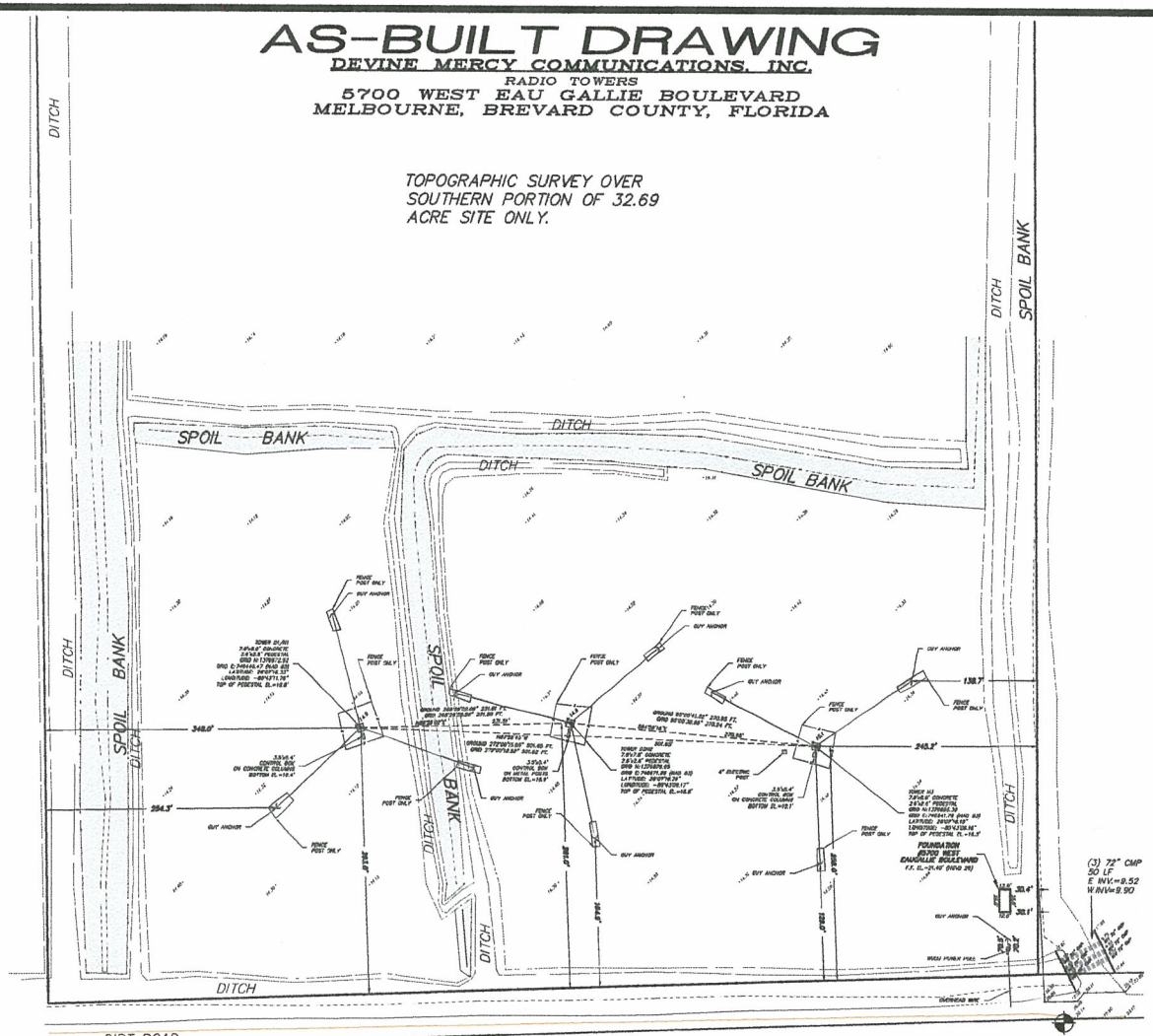
AS-BUILT DRAWING

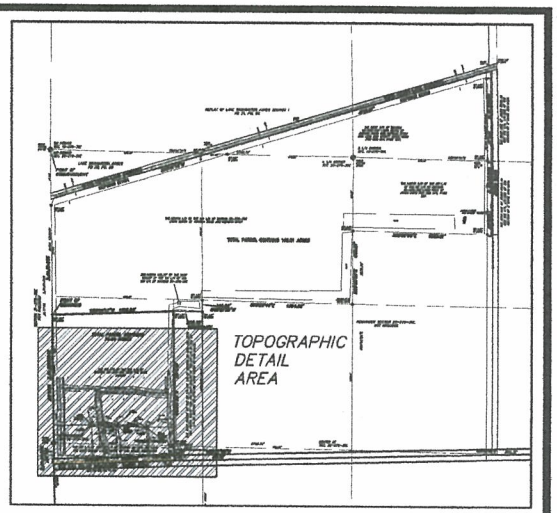
DEVINE MERCY COMMUNICATIONS, INC.

RADIO TOWERS

5700 WEST EAU GALLIE BOULEVARD
MELBOURNE, BREVARD COUNTY, FLORIDA

TOPOGRAPHIC SURVEY OVER
SOUTHERN PORTION OF 32.69
ACRE SITE ONLY.





OVERALL KEY MAP
SCALE: 1" = 500'

THE COORDINATES SHOWN HEREON ARE BASED ON THE STATE PLANE COORDINATE SYSTEM FOR FLORIDA'S EAST ZONE NORTH AMERICAN DATUM OF 1983 AND READJUSTED IN 2012 (NAD83/12). THE COORDINATE VALUES SHOWN HEREON WERE COMPUTED USING AUTOCAD LAND DEVELOPMENT DESKTOP 2004. ROTATION BEING +00°03'53". A PROJECT SCALE FACTOR OF 0.99995087770 WAS USED TO CONVERT GROUND TO GRID DISTANCE. THE PROJECT SCALE FACTOR CAN BE APPLIED TO CONVERT THE GROUND DISTANCE TO GRID DISTANCE. ALL VALUES SHOWN ARE IN US SURVEY FEET. ALL DISTANCES SHOWN ARE GROUND DISTANCES.

DESCRIPTION:
A PORTION OF THE WEST 1/4 OF SECTION 22, TOWNSHIP 27S., RANGE 36E., BREVARD COUNTY, FLORIDA, LYING NORTH OF EAU GALLIE BOULEVARD AND BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS;
COMMENCE AT THE NORTHWEST CORNER OF SAID SECTION 22 AND RUN S00°48'49"E, ALONG THE WEST LINE OF SAID SECTION 22, 1487.08 FEET TO THE POINT OF BEGINNING OF THE FOLLOWING DESCRIBED PARCEL; THENCE CONTINUE S00°48'49"E, ALONG SAID WEST LINE, 1156.08 FEET TO THE WEST 1/4 CORNER OF SAID SECTION 22; THENCE S00°49'44"E, ALONG THE WEST LINE OF SAID SECTION 22, 141.55 FEET TO THE NORTH RIGHT OF WAY LINE OF EAU GALLIE BOULEVARD; THENCE N88°00'17"E, ALONG SAID NORTH RIGHT OF WAY LINE, 1082.48 FEET; THENCE N00°21'35"W, ALONG A LINE BEING 260.68 FEET WEST OF AND PARALLEL WITH THE EAST LINE OF THE NORTHWEST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 22, 83.18 FEET; THENCE N00°21'28"W, ALONG A LINE BEING 260.68 FEET WEST OF AND PARALLEL WITH THE EAST LINE OF THE SOUTHWEST 1/4 OF THE NORTHWEST 1/4 OF SAID SECTION 22, 1214.69 FEET; THENCE S88°00'17"W, PARALLEL TO THE SAID NORTH RIGHT OF WAY LINE OF EAU GALLIE BOULEVARD, 1102.83 FEET TO THE POINT OF BEGINNING.
SAID PARCEL CONTAINS 32.69 ACRES, MORE OR LESS.

TOPOGRAPHIC SURVEY PREPARED FOR:
DIVINE MERCY COMMUNICATIONS, INC..

Exhibit 2.11
Post Construction Array Geometry Diagram

AAL LAND SURVEYING SERVICES, INC.
3670 ARITON ROAD, WEST MELBOURNE, FL 32904 L.B.#6823
PHONE: (321)768-9110 FAX: (321)953-9771 E-MAIL: aallsurvey@bellsouth.com
ANDREW M. PUSHKIN P.L.S. No. 6383
DANIEL A. SPENCER P.L.S. No. 6169

SCALE: 1" = 60'
JOB # 23166.10
FIELD SURVEY 04.12.-30-08
SECTION 15,22, TOWNSHIP 27 NORTH, RANGE 36 EAST
L.B. #6823

NOTES:
1. THIS SURVEY AND DRAWING HAVE BEEN PREPARED IN CONFORMITY WITH APPLICABLE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS IN CHAPTER 5J-17, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.
2. THIS SURVEY IS FOR THE SOLE BENEFIT OF THE ENTITIES NAMED HEREON AND FOR THE SPECIFIC PURPOSE NOTED AND SHOULD NOT BE RELIED UPON BY ANY OTHER ENTITY, AND IS NOT TRANSFERABLE UNDER ANY CIRCUMSTANCES.
3. THIS SURVEY IS NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF THE FLORIDA LICENSED SURVEYOR AND MAPPER NAMED HEREON. ADDITIONS OR DELETIONS TO SURVEY MAPS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT THE WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES. ANY REPRODUCTION OF THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE SURVEYOR IS HEREBY FORBIDDEN.
4. NO OPINION OF TITLE OR OWNERSHIP IS HEREBY EXPRESSED OR IMPLIED BY THE SURVEYOR.
5. THIS SURVEY WAS PREPARED FROM INFORMATION FURNISHED TO THE SURVEYOR BY THE CLIENT, AND MAY BE SUBJECT TO EASEMENTS OR LIMITATIONS EITHER RECORDED OR UNRECORDED.
6. BEARINGS ARE BASED ON ASSUMED DATUM AND ON THE LINE SHOWN AS BEING THE BASIS OF BEARINGS.
7. NO UNDERGROUND IMPROVEMENTS HAVE BEEN LOCATED UNLESS OTHERWISE SHOWN.
8. ELEVATIONS, IF SHOWN, ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988, UNLESS OTHERWISE NOTED.

REVISIONS:
REVISION: ADDITION 07/26/13
REVISION: SOLAR TECH 4/5/2013
REVISION: MINOR TECH 5/6/2011
REVISION:
REVISION:
REVISION:
REVISION: ARRAYS ADDED 05/06/14

LEGEND
(M) – MEASURED
(P) – PLAT
(R) – RADIAL
(NR) – NON RADIAL
(NM) – NON MONUMENT
CM – CONCRETE MONUMENT
P.O.B. – POINT OF BEGINNING
R/W – RIGHT OF WAY
– PUBLIC
– UTILITY
– EASEMENT
– FINISH FLOOR
– FINISH FLOOR ELEVATION
– ELEVATION
– DELTA
– RADIUS
– ARC LENGTH
– CHORD BEARING
– NON RADIAL
– RADIAL AND CHORD
– CONCRETE
– ASPHALT
– POINT OF LINE
– PERMANENT REFERENCE MARKER

Exhibit 3.10 - WDMC Melbourne, FL Sample System Verification Documentation

Carrier Freq (kHz) 920 WDMC MELBOURNE, FL

Sample Line

Manufacturer	Model	Velocity Factor (0.xx)	Design Length (feet)	Full Wave Freq (kHz)
RFS	LCF12-50-JTC	0.88	820	1055.5

Theoretical Calculations

	90°	270°	450°	630°
Resonant Frequency (kHz)	263.9	791.7	1319.4	1847.2
Distance from Carrier (kHz)	-656.1	-128.3	399.4	927.2

Initial Measurements (Before Trimming Line Lengths) 3/14/2017

Sample Lines	Selected Resonance (Electrical °)	Measured Freq at Resonance (MHz)	Line Length at Carrier Freq (Electrical °)	Maximum Deviation
Twr 1 WEST	270°	783.48	0.3°	*0.0°*
Twr 2 CENTER	270°	783.42	0.3°	
Twr 3 EAST	270°	783.6	0.3°	

Final Measurements After Trimming Line Lengths)

Measurement Date: 3/14/2017

Sample Lines	Selected Resonance (Electrical °)	Measured Freq at Resonance (MHz)	Line Length at Carrier Freq (Electrical °)	Maximum Deviation
Twr 1	270°	783.48	0.3°	*0.0°*
Twr 2	270°	783.42	0.3°	
Twr 3	270°	783.6	0.3°	

Sample Line Impedance Measurements

Measurement Date: 3/14/2017

Sample Lines	+45° Frequency (MHz)	Measured Resistance	Measured Reactance	Line Impedance	Average Impedance	Maximum Deviation	AVE ON
Twr 1	914.06000	6.49	49.98	50.40	50.37	*0.06*	
Twr 2	913.99000	7.06	49.96	50.46	50.43		
Twr 3	914.20000	6.51	50.02	50.44	50.38		

Sample Lines	-45° Frequency (MHz)	Measured Resistance	Measured Reactance	Line Impedance	AVE ON
Twr 1	652.90000	4.37	-50.15	50.34	
Twr 2	652.85000	4.92	-50.17	50.41	
Twr 3	653.00000	4.37	-50.13	50.32	

Sampling Devices

Measurement Date: 3/14/2017

Location	Manufacturer	Model	Serial Number	Magnitude	Phase	
Twr 1 WEST	Delta	TCT-1	18291	*998 mU*	*Neg 78.0m Deg*	Smooth & Ave ON
Twr 2 CENTER	Delta	TCT-1	18292	*REF*	*REF*	
Twr 3 EAST	Delta	TCT-1	18293	*997.5 mU*	*20.0m Deg*	Smooth & Ave ON

Sample Line Measurements with Sampling Devices Attached

Measurement Date: 3/14/2017

Sample Line	Frequency (MHz)	Measured Resistance	Measured Reactance	Line Impedance	AVE ON
Twr 1	920	49.12	-1.22	49.14	
Twr 2	920	49.23	-1.20	49.24	
Twr 3	920	49.18	-1.23	49.20	

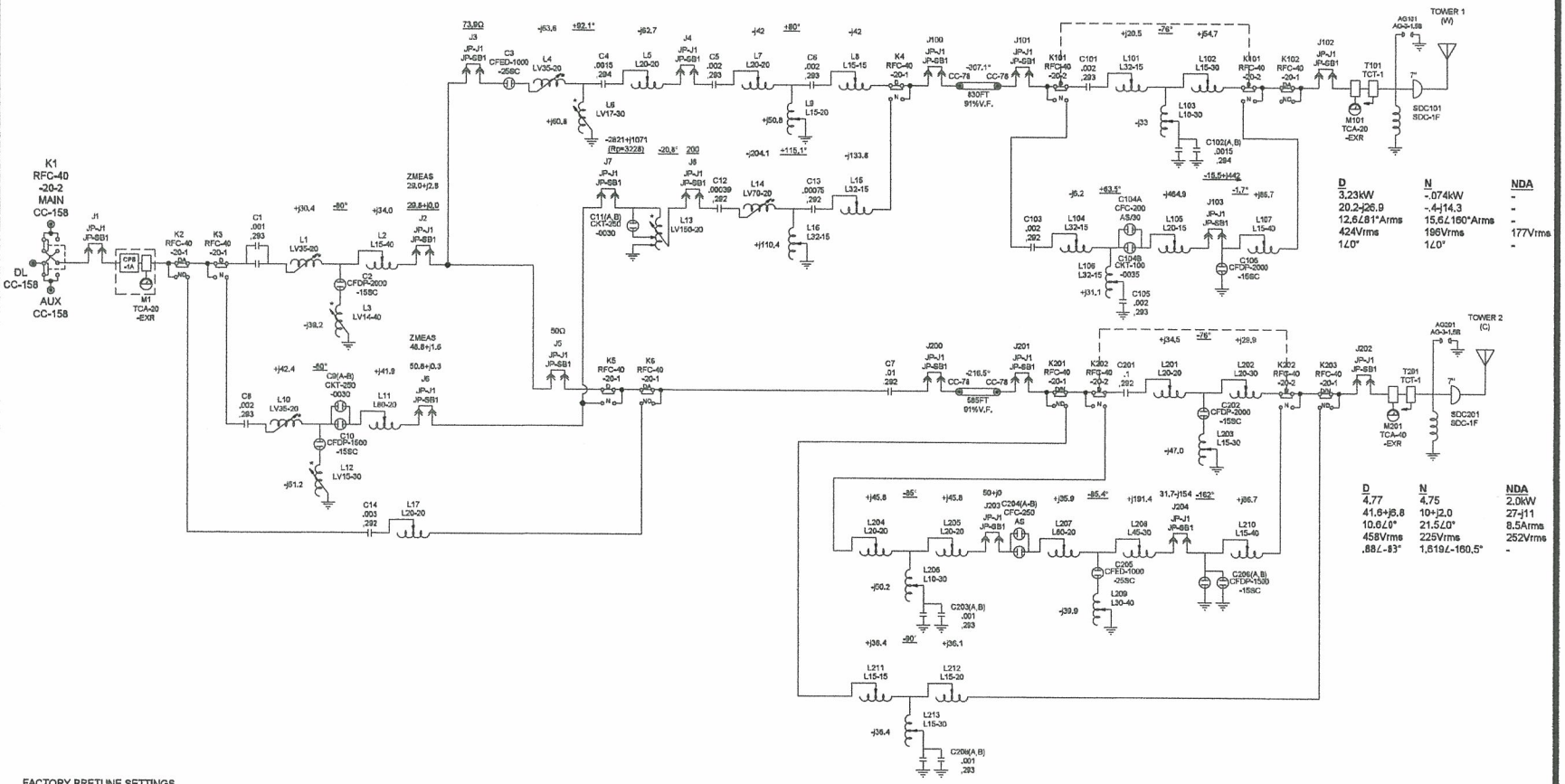
Munn-Reese
Broadcast Engineering Consultants
Coldwater, MI 49036

Exhibit 4.10 - WDMC Melbourne, FL Day Field Strength Measurement Reference Points

WDMC - Melbourne, FL 920 kHz					
Day Directional Pattern - March 16, 2017					
Radial:	**88.5°**				FIM-41 s/n 1149 - Calibrated 5/4/2016
		Distance	**NAD27**		
Point #	**mV/m**	**km**	**North Latitude**	**West Longitude**	**Description**
1	171	5.96	28-07-20	80-39-33	SE corner of Alexia St. & Burns @ curb
2	150	6.52	28-07-20	80-39-13	Front of 1983 Madison Avenue
3	135	6.90	28-07-21	80-38-59	Front of 969 Garfield St.
Radial:	**268.5°**				FIM-41 s/n 1149 - Calibrated 5/4/2016
		Distance	**NAD27**		
Point #	**mV/m**	**km**	**North Latitude**	**West Longitude**	**Description**
1	10.0	17.3	28-06-59	80-53-48	On Deer Park Rd(419), Across rd from pole#626379
2	5.5	20.4	28-06-57	80-55-42	On E. Irlo Bronson Mem Hwy(500)(192) E. bound side, W. of 12490 driveway by 50 ft
3	1.3	28.3	28-06-50	81-00-30	On Crabgrass Rd, S of pole#B15545 by 50 yds

Exhibit 4.11 - WDMC Melbourne, FL Night Field Strength Measurement Reference Points

WDMC - Melbourne, FL 920 kHz					
Night Directional Pattern - March 17, 2017					
Radial:	**5.5°**				FIM-41 s/n 1149 - Calibrated 5/4/2016
		Distance	**NAD27**		
Point #	**mV/m**	**km**	**North Latitude**	**West Longitude**	**Description**
1	55.0	2.31	28-08-30	80-43-02	At 5355 Pine Vista Dr. (East driveway)
2	45.0	2.98	28-08-51	80-42-59	At E. property line of 5301 Palomino Dr.
3	34.5	3.21	28-08-59	80-42-59	Front of 5275 Sorrell Dr.
Radial:	**91.5°**				FIM-41 s/n 1149 - Calibrated 5/4/2016
		Distance	**NAD27**		
Point #	**mV/m**	**km**	**North Latitude**	**West Longitude**	**Description**
1	212.0	5.12	28-07-11	80-40-02	Front of mailbox @ 804 Iroquois Ave.
2	155.0	6.00	28-07-10	80-39-30	At 780 Cronin Ave. @ driveway
3	146.0	7.08	28-07-09	80-38-50	At Ixora Dr. & N. Hudson Cir. intersection
Radial:	**177.5°**				FIM-41 s/n 1149 - Calibrated 5/4/2016
		Distance	**NAD27**		
Point #	**mV/m**	**km**	**North Latitude**	**West Longitude**	**Description**
1	42.0	8.8	28-02-30	80-42-56	At 1565 Zaffer St., NW Driveway
2	49.0	9.7	28-02-01	80-42-55	At W. property edge of 1468 Napanee St. NW
3	46.0	10.6	28-01-33	80-42-53	At 1500 Gardenton St. NW
Radial:	**215.0°**				FIM-41 s/n 1149 - Calibrated 5/4/2016
		Distance	**NAD27**		
Point #	**mV/m**	**km**	**North Latitude**	**West Longitude**	**Description**
1	5.1	5.12	28-04-59	80-44-58	On E. bound Space Coast Hwy(500), near AT&T cable marker
2	0.30	40.7	27-49-15	80-57-27	On S Kenansville Rd(15), near buried telephone cable
3	0.19	52.4	27-44-02	81-01-31	On Hwy 60, N. side of rd., 190 yds W. of Peavine Trail



FACTORY PRETUNE SETTINGS

L1	16.90
L3	3.00
L4	16.51
L6	3.11
L10	17.85
L12	3.90
L13	30.70
L14	21.30

Exhibit 5.10

Diagram of Phasing and Coupling Equipment

NOTES:
1. * REPRESENTS FRONT PANEL CONTROL
2. TOWERS ARE 196' + 45' TOP LOADING
3. WEATHERPROOF ATUS
4. 24VDC SLAVE PANELS
5. 2 BAY PHASOR =
   - 5.1. 42"W x 42"D x 80"H
   - 5.2. 42"W X 42"D X 80"H
   - 5.3. EACH WITH ALL TRANSMISSION LINE CONNECTIONS ON TOP.
6. PAINTED WEATHERPROOF ATU
   - 6.1. TOWER 1 = 72"W x 44"H x 30"D +30" STAND HEIGHT
   - 6.2. TOWER 2 = 118"W x 44"H x 30"D +30" STAND HEIGHT
   - 6.3. TOWER 3 = 60"W x 35"H x 30"D + 30" STAND HEIGHT

KINTRONIC LABORATORIES INC.
BLUFF CITY, TN.

FREQ: 920kHz
POWER: D:8,N:4, ND:2kW

WDMC
MULTIPLEXER RF SCHEMATIC
MELBOURNE, FL

REV.	REV. DESCRIPTION:	REV. DATE:	JOB NO:	DESIGNED:
01	CABINET SIZES	22-Sep-15	112119	BCOX
DWG NO:	REF DWG.	DATE:	DRAWN:	APPROVED:
10080-RFS-01		5-Feb-15	BWORLEY	