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COPY

October 16, 2015

Mark Lipp
202.719.7503
mlipp@wileyrein.com

VIA MESSENGER

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

Attention: Media Bureau

Re: **Application for Moment Method License and Direct Measurement of Power on FCC Form 302-AM**
Multicultural Radio Broadcasting Licensee, LLC
Station KCHN(AM), Brookshire, Texas
Facility Identifier Number 68124

Dear Ms. Dortch:

Transmitted herewith on behalf of Multicultural Radio Broadcasting Licensee, LLC ("MRBL"), the licensee of Station KCHN(AM) identified above, are an original and two copies of its application for license and direct measurement of power. MRBL's consulting engineer used the Method of Moments to prepare a proof-of-performance for the authorized and unmodified KCHN antenna radiation pattern, the results of which are submitted herewith.

Please note that the associated $1,480.00 filing fees were paid using FCC Fee Filer and proof of payment is included as part of this submission.

If there are any questions about this Application, please contact undersigned counsel for Multicultural Radio Broadcasting Licensee, LLC.

Sincerely,

Mark Lipp

Mark Lipp

Enclosures

13824121.1

Agency Tracking ID:PGC2747600
Authorization Number:211064
Successful Authorization -- Date Paid: 10/16/15
FILE COPY ONLY!!

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

SECTION A - Payer Information

(2) PAYER NAME (if paying by credit card, enter name exactly as it appears on your card)	(3) TOTAL AMOUNT PAID (dollars and cents)
Wiley Rein LLP	**$1480.00**

(4) STREET ADDRESS LINE NO. 1
1776 K Street, N.W.

(5) STREET ADDRESS LINE NO. 2

(6) CITY	(7) STATE	(8) ZIP CODE
Washington	**DC**	**20006-2304**

(9) DAYTIME TELEPHONE NUMBER (INCLUDING AREA CODE)	(10) COUNTRY CODE (IF NOT IN U.S.A.)
202-7197000 x7235	**US**

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

(11) PAYER (FRN)	(12) FCC USE ONLY
0002151744	

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

(13) APPLICANT NAME
Multicultural Radio Broadcasting Licensee, LLC

(14) STREET ADDRESS LINE NO. 1
27 William Street

(15) STREET ADDRESS LINE NO. 2
11th Floor

(16) CITY	(17) STATE	(18) ZIP CODE
New York	**NY**	**10005**

(19) DAYTIME TELEPHONE NUMBER (INCLUDING AREA CODE)	(20) COUNTRY CODE (IF NOT IN U.S.A.)
212-9661059	**US**

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

(21) APPLICANT (FRN)	(22) FCC USE ONLY
0010215812	

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

(23A) FCC Call Sign/Other ID	(24A) Payment Type Code(PTC)	(25A) Quantity
KCHN	**MMR**	**1**
(26A) Fee Due for (PTC)	(27A) Total Fee	FCC Use Only
$690.00	**$690.00**	
(28A) FCC CODE 1	(29A) FCC CODE 2	
68124	**FCCForm302-AM**	

(23B) FCC Call Sign/Other ID	(24B) Payment Type Code(PTC)	(25B) Quantity
KCHN	**MOR**	**1**
(26B) Fee Due for (PTC)	(27B) Total Fee	FCC Use Only
$790.00	**$790.00**	

(28B) FCC CODE 1	(29B) FCC CODE 2
68124	**FCCForm302-AM**

Electronic Form 159

Payment Confirmation

Your transaction has been approved. For your records, please note the following:

AGENCY TRACKING ID:	**PGC2747600**
AUTHORIZATION NUMBER :	**211064**
AMOUNT PAID :	**$1,480.00**

PRINT FORM 159 CLOSE

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Fee Filer

Main Menu | Submission Confirmation

Logged in as: Multicultural Radio Broadcasting Licensee, LLC (0010215812) [Log Out] Help

Submission Confirmation

You successfully filed your application fee obligation. The Remittance ID associated with this filling is **2747600**.
Submitting fee information and paying fees are two separate actions. You have not yet paid your fee. Click Continue to pay online or print Form 159. If you choose to mail your payment to the FCC rather than pay online, you must print and include Form 159 with your payment.

Total Amount: $1,480.00

CONTINUE GENERATE REPORT APP FEE MANAGER

Customer Service

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Financial Operations Help Desk: (877) 480-3201, option 4 (Mon.-Fri. 8 a.m.-6:00 p.m. ET)

Fee Filer has a dedicated staff of customer service representatives standing by to answer your questions or concerns.
You can email us at arinquiries@fcc.gov.

Accepted / Filed

Federal Communications Commission
Washington, D. C. 20554

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

FOR FCC USE ONLY

OCT 16 2015

Federal Communications Commission
Office of the Secretary

FCC 302-AM
APPLICATION FOR AM BROADCAST STATION LICENSE

(Please read instructions before filling out form.

FOR COMMISSION USE ONLY
FILE NO. BMML-20151016AGJ

SECTION I - APPLICANT FEE INFORMATION

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

Multicultural Radio Broadcasting Licensee, LLC

MAILING ADDRESS (Line 1) (Maximum 35 characters)
27 William Street

MAILING ADDRESS (Line 2) (Maximum 35 characters)
11th Floor

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
New York	New York	10005

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
212.431.4300	KCHN(AM)	68124

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	$	

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

SECTION II - APPLICANT INFORMATION		
1. NAME OF APPLICANT Multicultural Radio Broadcasting Licensee, LLC		
MAILING ADDRESS 27 William Street, 11th Floor		
CITY New York	STATE New York	ZIP CODE 10005

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
KCHN(AM)	Brookshire, TX	N/A	N/A	N/A

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. N/A

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. N/A

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. N/A

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	
Yvonne S. Liu		
Title	Date	Telephone Number
Secretary	10/16/2015	212.431.4300

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.

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STEPHEN S. LOCKWOOD, PE
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CONSULTANT

MAURY L. HATFIELD, PE
(1942-2009)
PAUL W. LEONARD, PE
(1925-2011)

ENGINEERING REPORT:

APPLICATION FOR LICENSE
and Direct Power Measurement

RADIO STATION KCHN, Brookshire, TX
1050 kHz, 410 Watts, DA-D
Facility ID #68124

October 14, 2015

APPLICATION FOR LICENSE
and Direct Power Measurement

RADIO STATION KCHN, Brookshire, TX
1050 kHz, 410 Watts, DA-D
Facility ID #68124

	Purpose of Application
Item 1	Tower Impedance Measurements and Verification of Method of Moments Model
Item 2	Derivation of Operating Parameters for Directional Antenna
Item 3	Method of Moments Model Details for Towers Driven Individually
Item 4	Method of Moments Model Details for Directional Antenna
Item 5	Array Geometry
Item 6	Sampling Line Measurements
Item 7	Reference Field Strength Measurements
Item 8	Direct Measurement of Power
Item 9	Antenna Monitor Data, Sample Device Measurements

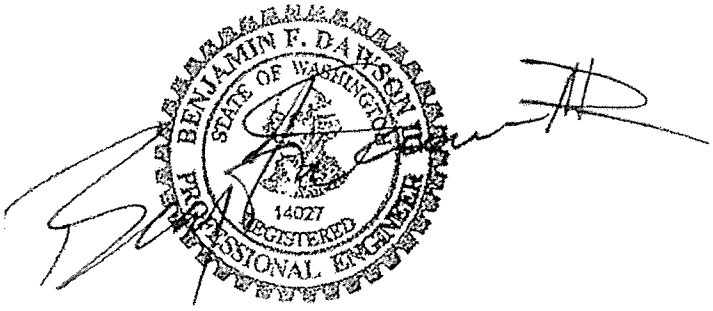
Appendix A	License BL-20010202ADZ (Most Recent Complete License Document)
Appendix B	FCC Form 302-AM

Purpose of Application

This engineering exhibit supports an application for a "moment method license" for the presently authorized and unmodified antenna radiation pattern of radio station KCHN, Brookshire, TX. KCHN is authorized per license to operate on 1050 kHz with a power of 410 Watts Daytime only, employing a directional antenna.

The antenna towers and ground system are unmodified from their established conditions and adjustments of the antenna parameters were made in accordance with the terms of the license and specifications provided for the previous licensing of the station. Information is provided herein demonstrating that the directional antenna parameters for the pattern authorized by the station license have been determined in accordance with the requirements of section 73.151(c) of the FCC Rules. The system has been adjusted to produce antenna monitor parameters within +/- 5 percent in ratio and +/- 3 degrees in phase of the modeled values, as required by the Rules. Measurements described in this report were made by George Schrank, George Butch, and by the undersigned.

Benjamin F. Dawson III, P.E.



October 14, 2015

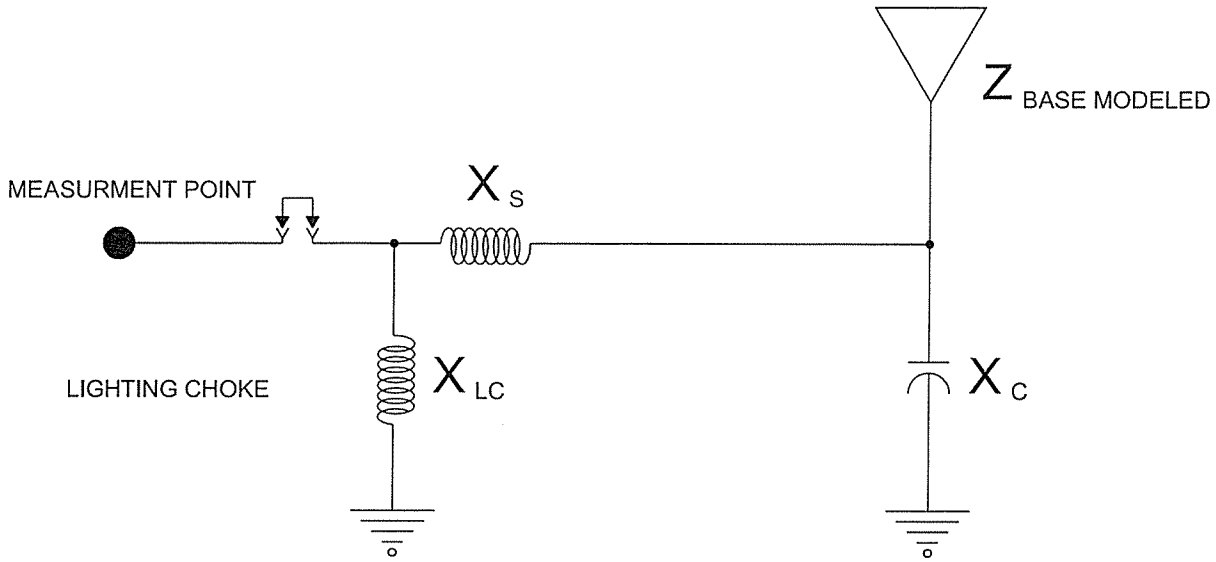
Item 1

Analysis of Tower Impedance Measurements to Verify Method of Moments Model

Tower impedance measurements were made at the locations of the sample system current transformers using an HP 8751A network analyzer in a calibrated measurement system. The other towers were open circuited at the same point where impedance measurements were made (the "reference points") for each of the measurements.

Circuit calculations were performed to relate the method of moments modeled impedances at the tower feed points to those at the current sample device locations as shown in the table. The base conditions shown for each tower, which includes the stray capacitances, were used in the moment method model as a load at ground level for the open circuited case. The static drain chokes in use have been included in the network for the tower being modeled despite their relatively high impedances. The long lead series inductances in the antenna tuning equipment buildings have been measured and those measured values, some of which are greater than 10 µH, are used in those base region network models.

In addition to the page showing the schematic of the assumed circuit and tabulation of calculated values, a page with the result of calculations using the NETBW circuit analysis program is shown. These calculations show the impedance transformations and phase shifts between the tower base values produced by the MININEC moment method model and the location of the current sample devices used to produce the antenna monitor input signals.



TOWER	X_{LC} (Ω)	*X_S (Ω)	X_C (Ω)	$Z_{BASE\ MODELED}$ (Ω)	$Z_{MP\ MODELED}$ (Ω)	$Z_{MP\ MEASURED}$ (Ω)
#1	+j2500	+j 57.4	-j10,000	24.35 -j53.74	24.01+j4.1	24.15+j4.55
#2	+j2500	+j 60.2	-j10,000	23.66 -j55.16	23.3+j5.49	23.55+j6.23
#3	+j2500	+j 71.7	-j10,000	23.61 -j55.2	23.04+j16.8	23.55+j16.6
#4	+j2500	+j 67.85	-j10,000	23.535 -j53.48	23.01+j14.7	22.88+j14.7

* NOTE: LEAD INDUCTANCE VALUES ARE MEASURED PER 73.151 (c) (1) (vii)
SINCE SOME EXCEED 10 µH

Dwayne Straume, H&D 9/1/2015 KCHN TABLE.dwg

HATFIELD & DAWSON
CONSULTING ENGINEERS

ANALYSIS OF TOWER IMPEDANCE MEASUREMENTS TO VERIFY METHOD OF MOMENTS MODEL

RADIO STATION KCHN 1050 kHz BROOKSHIRE, TX 9/2015

NETBW CALCULATION OF IMPEDANCE AT ATU OUTPUT (SAMPLE DEVICE/
IMPEDANCE MEASUREMENT LOCATION) AS MODIFIED BY BASE CAPACITANCE,
SERIES FEED PIPE INDUCTANCE AND STATIC DRAIN INDUCTOR

TOWER 1

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE	PHASE SHIFT
1050.0	24.350	-53.740	24.0132	4.1139	+0.4125

TOWER 2

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE	PHASE SHIFT
1050.0	23.660	-55.160	23.3003	5.4940	+0.4003

TOWER 3

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE	PHASE SHIFT
1050.0	23.610	-55.190	23.0395	16.8603	+0.3971

TOWER 4

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE	PHASE SHIFT
1050.0	23.535	-53.480	23.0136	14.7283	+0.3964

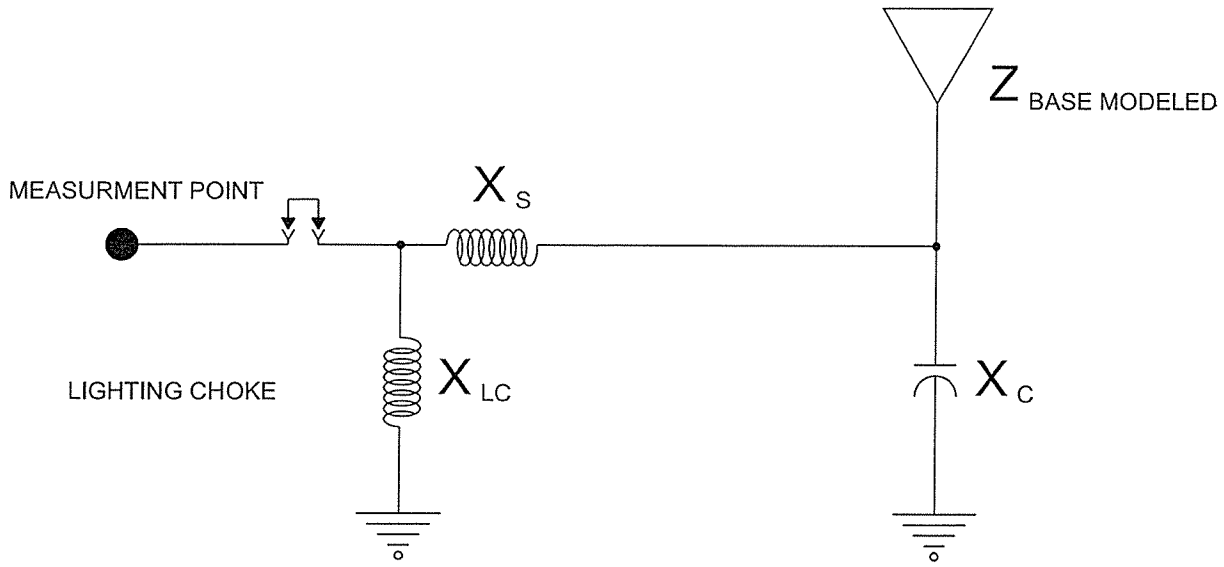
Item 2

Derivation of Operating Parameters for Directional Antenna - KCHN

The method of moments model of the array, following verification with the measured individual open circuited base impedances, was used for directional antenna calculations. Calculations were made to determine the complex voltage values for sources located at ground level at the base of each tower of the array to produce current moment sums for the towers that, when normalized, equated to the theoretical field parameters of the authorized directional antenna pattern. With these voltage sources, the tower currents and phases were calculated. 20 segments were used for towers in the moment method model. The currents and voltages at the tower bases (segments 1, 21, 41, and 61) were used to calculate the currents at the sample device locations by Kirchoff's law, using the analysis program NETBW.

Tower	Modeled Current Pulse	Base Current Magnitude	Base Current Phase	Antenna Monitor Sample Ratio	Antenna Monitor Sample Phase
1 W	1	2.2446	132.6	0.439	131.6
2 CW	21	5.084	1.1	1.0	0
3 CE	41	4.4781	226.2	0.889	-134.8
4 E*	61	1.5276	90.5	0.306	90.2

* **NOTE:** Negative Tower!



TOWER	X LC (Ω)	*X S (Ω)	X C (Ω)	Z BASE MODELED (Ω)	Z MP MODELED (Ω)	CURRENT PHASE ▲ (Ω)
#1	+j2500	+j 57.4	-j10,000	4.22 -j63.55	4.186-j5.75	+0.0717°
#2	+j2500	+j 60.2	-j10,000	11.32 -j51.67	11.12+j9.39	+0.1913°
#3	+j2500	+j 71.7	-j10,000	8.67 -j35.3	8.36+j36.02	+0.145°
#4	+j2500	+j 67.85	-j10,000	33.27 -j2.6	-31.58+j68.89	-0.552°

* NOTE: MEASURED VALUES

Dwayne Straume, H&D 9/1/2015 KCHN TABLE.dwg

HATFIELD & DAWSON
CONSULTING ENGINEERS

CALCULATION OF OPERATING ANTENNA MONITOR VALUES
FROM MOMENT METHOD MODEL

RADIO STATION KCHN 1050 kHz BROOKSHIRE, TX 9/2015

NETBW CALCULATIONS OF IMPEDANCE AT ATU OUTPUT (SAMPLE DEVICE/
IMPEDANCE MEASUREMENT LOCATION) AS MODIFIED BY BASE CAPACITANCE,
FEED PIPE SERIES INDUCTANCE, AND STATIC DRAIN INDUCTANCE

FOR DRIVEN RADIATION PATTERN

TOWER 1

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE	PHASE SHIFT
1050.0	4.220	-63.550	4.1861	-5.7567	+0.0717

TOWER 2

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE	PHASE SHIFT
1050.0	11.320	-51.070	11.1214	9.3915	+0.1913

TOWER 3

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE	PHASE SHIFT
1050.0	8.670	-35.300	8.3629	36.0194	+0.1450

TOWER 4

FREQUENCY (KHZ)	LOAD RESISTANCE	LOAD REACTANCE	INPUT RESISTANCE	INPUT REACTANCE	PHASE SHIFT
1050.0	-33.270	-2.600	-31.5796	63.8953	+0.5521

Item 3

Method of Moments Model Details for Towers Driven Individually - KCHN

The array of towers was modeled using MININEC. A single wire was used to represent each tower, which are uniform cross section. The top and bottom wire end points were specified using the theoretical directional antenna specifications in electrical degrees. The maximum and minimum segment lengths are 3.825 and 3.775 electrical degrees respectively.

Each tower's modeled height relative to its physical height falls within the required range of 75 to 125 percent and each modeled radius falls within the required range of 80 percent to 150 percent of the radius of a circle having a circumference equal to the sum of the widths of the tower sides. (Note that tower 4 has a larger face width than towers 1-3.

Tower #	Physical Height (degrees)	Modeled Height (degrees)	Modeled Percentage of Height	Modeled Radius (Meters)	Percent of Equivalent Radius
1 W	75.5	76.5	101.32	0.1819	125
2 CW	75.5	76.25	100.99	0.1819	125
3 CE	75.5	76.25	100.99	0.1819	125
4 E	75.5	75.5	100.00	0.262	120

The following pages show the details of the method of moments models for the individually driven towers.

TOWER #1 DRIVEN WITH OTHER TOWERS LOADED WITH BASE REGION REACTANCE

H:\KCHN Brookshire\kchn1 08-28-2015 11:00:19

KCHN Brookshire, TX

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.1819	20
		0	0	76.5		
2	none	82.2	112.	0	.1819	20
		82.2	112.	76.25		
3	none	164.4	111.6	0	.1819	20
		164.4	111.6	76.25		
4	none	246.8	111.8	0	.262	20
		246.8	111.8	75.5		

Number of wires = 4
current nodes = 80

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	4	3.775	1	3.825
radius	1	.1819	4	.262

ELECTRICAL DESCRIPTION
Frequencies (KHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1,050.	0	1	.0104861	.010625

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	21	0	-10,000.	0	0	0
2	41	0	-10,000.	0	0	0
3	61	0	-10,000.	0	0	0

H:\KCHN Brookshire\kchn1 08-28-2015 11:00:19

IMPEDANCE
normalization = 50.

freq (KHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1,050.	24.346	-53.74	58.998	294.4	4.7003	-3.7532	-

TOWER #2 DRIVEN WITH OTHER TOWERS LOADED WITH BASE REGION REACTANCE

H:\KCHN Brookshire\kchn2 08-28-2015 11:03:58

KCHN Brookshire, TX

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.1819	20
		0	0	76.5		
2	none	82.2	112.	0	.1819	20
		82.2	112.	76.25		
3	none	164.4	111.6	0	.1819	20
		164.4	111.6	76.25		
4	none	246.8	111.8	0	.262	20
		246.8	111.8	75.5		

Number of wires = 4
current nodes = 80

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	4	3.775	1	3.825
radius	1	.1819	4	.262

ELECTRICAL DESCRIPTION
Frequencies (KHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	1,050.	0	1	.0104861	.010625

Sources

source	node	sector	magnitude	phase	type
1	21	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-10,000.	0	0	0
2	41	0	-10,000.	0	0	0
3	61	0	-10,000.	0	0	0

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IMPEDANCE
normalization = 50.

freq (KHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 21, sector 1							
1,050.	23.659	-55.165	60.025	293.2	4.9573	-3.553	-2.528

TOWER #3 DRIVEN WITH OTHER TOWERS LOADED WITH BASE REGION REACTANCE

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KCHN Brookshire, TX

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.1819	20
		0	0	76.5		
2	none	82.2	112.	0	.1819	20
		82.2	112.	76.25		
3	none	164.4	111.6	0	.1819	20
		164.4	111.6	76.25		
4	none	246.8	111.8	0	.2725	20
		246.8	111.8	75.5		

Number of wires = 4
current nodes = 80

Individual wires	minimum wire	minimum value	maximum wire	maximum value
segment length	4	3.775	1	3.825
radius	1	.1819	4	.2725

ELECTRICAL DESCRIPTION

Frequencies (KHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	1,050.	0	1	.0104861	.010625

Sources

source	node	sector	magnitude	phase	type
1	41	1	1.	0	voltage

Lumped loads

passive load circuit	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	
1	1	0	-10,000.	0	0	0
2	21	0	-10,000.	0	0	0
3	61	0	-10,000.	0	0	0

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IMPEDANCE
normalization = 50.

freq (KHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 41, sector 1							
1,050.	23.608	-55.196	60.033	293.2	4.9698	-3.5438	-2.5352

TOWER #4 DRIVEN WITH OTHER TOWERS LOADED WITH BASE REGION REACTANCE

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KCHN Brookshire, TX

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.1819	20
		0	0	76.5		
2	none	82.2	112.	0	.1819	20
		82.2	112.	76.25		
3	none	164.4	111.6	0	.1819	20
		164.4	111.6	76.25		
4	none	246.8	111.8	0	.262	20
		246.8	111.8	75.5		

Number of wires = 4
current nodes = 80

Individual wires	minimum wire	minimum value	maximum wire	maximum value
segment length	4	3.775	1	3.825
radius	1	.1819	4	.262

ELECTRICAL DESCRIPTION
Frequencies (KHz)

no.	frequency lowest	step	no. of steps	segment length (wavelengths) minimum	maximum
1	1,050.	0	1	.0104861	.010625

Sources

source	node	sector	magnitude	phase	type
1	61	1	1.	0	voltage

Lumped loads

load	node	resistance (ohms)	reactance (ohms)	inductance (mH)	capacitance (uF)	passive circuit
1	1	0	-10,000.	0	0	0
2	21	0	-10,000.	0	0	0
3	41	0	-10,000.	0	0	0

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IMPEDANCE
normalization = 50.

freq (KHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 61, sector 1							
1,050.	23.535	-53.476	58.426	293.8	4.8178	-3.6589	-2.4461

Item 4

Method of Moments Model Details for Directional Antenna- KCHN

The array was modeled using MININEC with the individual tower characteristics that were verified by the respective tower impedance measurements. Calculations were made to determine the complex voltage values for sources located at ground level under each tower of the array to produce current moment sums for the towers that, when normalized, equated to the theoretical field parameters of the authorized directional antenna pattern. The following pages contain details of the method of moments model of the directional antenna pattern.

Tower	Wire	Base Node
1 W	1	1
2 CW	2	21
3 CE	3	41
4 E	4	61

MOMENT METHOD MODEL WITH DIRECTIONAL DRIVE VOLTAGES

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KCHN Brookshire, TX

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

wire	caps	Distance	Angle	Z	radius	segs
1	none	0	0	0	.1819	20
		0	0	76.5		
2	none	82.2	112.	0	.1819	20
		82.2	112.	76.25		
3	none	164.4	111.6	0	.1819	20
		164.4	111.6	76.25		
4	none	246.8	111.8	0	.262	20
		246.8	111.8	75.5		

Number of wires = 4
current nodes = 80

	minimum		maximum	
Individual wires	wire	value	wire	value
segment length	4	3.775	1	3.825
radius	1	.1819	4	.262

ELECTRICAL DESCRIPTION
Frequencies (KHz)

	frequency		no. of	segment length (wavelengths)	
no.	lowest	step	steps	minimum	maximum
1	1,050.	0	1	.0104861	.010625

Sources

source	node	sector	magnitude	phase	type
1	1	1	202.168	46.4	voltage
2	21	1	376.062	283.6	voltage
3	41	1	230.164	150.	voltage
4	61	1	72.1065	275.	voltage

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IMPEDANCE
normalization = 50.

freq (KHz)	resist (ohms)	react (ohms)	imped (ohms)	phase (deg)	VSWR	S11 dB	S12 dB
source = 1; node 1, sector 1							
1,050.	4.2181	-63.547	63.687	273.8	31.053	-.55962	-9.1757
source = 2; node 21, sector 1							
1,050.	11.321	-51.065	52.304	282.5	9.1403	-1.9082	-4.4908
source = 3; node 41, sector 1							
1,050.	8.6659	-35.296	36.344	283.8	8.7033	-2.0049	-4.3209
source = 4; node 61, sector 1							
1,050.	-33.272	-2.6422	33.376	184.5	****	****	****

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CURRENT rms
Frequency = 1050 KHz
Input power = 410. watts
Efficiency = 100. %
coordinates in degrees

current no.	X	Y	Z	mag (amps)	phase (deg)	real (amps)	imaginary (amps)
GND	0	0	0	2.24466	132.6	-1.52041	1.65131
2	0	0	3.825	2.17829	132.5	-1.47246	1.60524
3	0	0	7.65	2.12257	132.5	-1.43276	1.56604
4	0	0	11.475	2.06218	132.4	-1.39018	1.52316
5	0	0	15.3	1.9954	132.3	-1.34346	1.47538
6	0	0	19.125	1.92157	132.3	-1.29214	1.42225
7	0	0	22.95	1.84052	132.2	-1.23609	1.36367
8	0	0	26.775	1.75226	132.1	-1.17532	1.29963
9	0	0	30.6	1.65694	132.1	-1.10996	1.23022
10	0	0	34.425	1.55476	132.	-1.04014	1.1556
11	0	0	38.25	1.44599	131.9	-.966063	1.07593
12	0	0	42.075	1.33092	131.8	-.887949	.991406
13	0	0	45.9	1.20982	131.8	-.806009	.902232
14	0	0	49.725	1.083	131.7	-.720457	.808597
15	0	0	53.55	.950698	131.6	-.631493	.710663
16	0	0	57.375	.813074	131.5	-.539243	.608529
17	0	0	61.2	.670136	131.5	-.443738	.502174
18	0	0	65.025	.521556	131.4	-.344789	.391332
19	0	0	68.85	.366244	131.3	-.24171	.275157
20	0	0	72.675	.201137	131.2	-.132512	.151317
END	0	0	76.5	0	0	0	0
GND	-30.7927	-76.2145	0	5.084	1.1	5.08304	.0988019
22	-30.7927	-76.2145	3.8125	4.96085	.8	4.96032	.072098
23	-30.7927	-76.2145	7.625	4.85182	.6	4.85151	.0547783
24	-30.7927	-76.2145	11.4375	4.72908	.5	4.72891	.040108
25	-30.7927	-76.2145	15.25	4.58948	.3	4.5894	.0272788
26	-30.7927	-76.2145	19.0625	4.43192	.2	4.4319	.0159554
27	-30.7927	-76.2145	22.875	4.25614	.1	4.25613	5.98E-03
28	-30.7927	-76.2145	26.6875	4.06224	360.	4.06223	-2.72E-03
29	-30.7927	-76.2145	30.5	3.85057	359.8	3.85056	-.0101799
30	-30.7927	-76.2145	34.3125	3.62162	359.7	3.62159	-.0164271
31	-30.7927	-76.2145	38.125	3.37599	359.6	3.37592	-.0214629
32	-30.7927	-76.2145	41.9375	3.1143	359.5	3.1142	-.0252854
33	-30.7927	-76.2145	45.75	2.8372	359.4	2.83707	-.0278878
34	-30.7927	-76.2145	49.5625	2.54533	359.3	2.54517	-.0292599
35	-30.7927	-76.2145	53.375	2.23921	359.2	2.23902	-.0293879
36	-30.7927	-76.2145	57.1875	1.91918	359.2	1.91897	-.0282529
37	-30.7927	-76.2145	61.	1.58517	359.1	1.58496	-.0258268
38	-30.7927	-76.2145	64.8125	1.23635	359.	1.23616	-.0220621
39	-30.7927	-76.2145	68.625	.870067	358.9	.869904	-.0168663
40	-30.7927	-76.2145	72.4375	.478916	358.8	.478811	-.0100278
END	-30.7927	-76.2145	76.25	0	0	0	0
GND	-60.5197	-152.855	0	4.47808	226.2	-3.10049	-3.23112
42	-60.5197	-152.855	3.8125	4.39938	226.	-3.05778	-3.16299
43	-60.5197	-152.855	7.625	4.32184	225.8	-3.01135	-3.10001
44	-60.5197	-152.855	11.4375	4.22858	225.7	-2.95255	-3.0271
45	-60.5197	-152.855	15.25	4.11774	225.6	-2.88046	-2.94257
46	-60.5197	-152.855	19.0625	3.98876	225.5	-2.79486	-2.84587
47	-60.5197	-152.855	22.875	3.84158	225.4	-2.69579	-2.73687
48	-60.5197	-152.855	26.6875	3.67642	225.4	-2.58346	-2.61569

49	-60.5197	-152.855	30.5	3.49367	225.3	-2.45818	-2.48256
50	-60.5197	-152.855	34.3125	3.29381	225.2	-2.32031	-2.33781
51	-60.5197	-152.855	38.125	3.07739	225.2	-2.17024	-2.18183
52	-60.5197	-152.855	41.9375	2.84501	225.1	-2.00844	-2.015
53	-60.5197	-152.855	45.75	2.59726	225.	-1.83533	-1.83775
54	-60.5197	-152.855	49.5625	2.33473	225.	-1.65133	-1.65048
55	-60.5197	-152.855	53.375	2.05791	224.9	-1.4568	-1.45351
56	-60.5197	-152.855	57.1875	1.76708	224.9	-1.25196	-1.24706
57	-60.5197	-152.855	61.	1.4622	224.8	-1.03677	-1.03108
58	-60.5197	-152.855	64.8125	1.14247	224.8	-.810683	-.804998
59	-60.5197	-152.855	68.625	.805401	224.8	-.571925	-.567074
60	-60.5197	-152.855	72.4375	.444093	224.7	-.315584	-.312451
END	-60.5197	-152.855	76.25	0	0	0	0
GND	-91.6536	-229.15	0	1.52764	90.5	-.0134418	1.52758
62	-91.6536	-229.15	3.775	1.52178	91.4	-.0384121	1.5213
63	-91.6536	-229.15	7.55	1.50874	92.	-.0529901	1.50781
64	-91.6536	-229.15	11.325	1.48789	92.5	-.06466	1.48649
65	-91.6536	-229.15	15.1	1.45923	92.9	-.0741564	1.45735
66	-91.6536	-229.15	18.875	1.42281	93.3	-.0818101	1.42046
67	-91.6536	-229.15	22.65	1.37874	93.7	-.087776	1.37594
68	-91.6536	-229.15	26.425	1.32715	94.	-.0921339	1.32395
69	-91.6536	-229.15	30.2	1.26822	94.3	-.0949262	1.26466
70	-91.6536	-229.15	33.975	1.2021	94.6	-.0961757	1.19825
71	-91.6536	-229.15	37.75	1.12902	94.9	-.0958914	1.12494
72	-91.6536	-229.15	41.525	1.04917	95.1	-.0940777	1.04495
73	-91.6536	-229.15	45.3	.962767	95.4	-.0907295	.958483
74	-91.6536	-229.15	49.075	.869984	95.7	-.0858392	.865739
75	-91.6536	-229.15	52.85	.770977	95.9	-.0793918	.766878
76	-91.6536	-229.15	56.625	.665811	96.2	-.0713612	.661976
77	-91.6536	-229.15	60.4	.554404	96.4	-.0617027	.55096
78	-91.6536	-229.15	64.175	.436365	96.6	-.0503306	.433453
79	-91.6536	-229.15	67.95	.310587	96.9	-.0370644	.308367
80	-91.6536	-229.15	71.725	.174322	97.1	-.0215052	.172991
END	-91.6536	-229.15	75.5	0	0	0	0

CURRENT MOMENT VALUES GENERATED FROM MININEC MODEL OF DRIVEN ARRAY

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CURRENT MOMENTS(amp-degrees) rms

Frequency = 1050 KHz
Input power = 410. watts

wire	magnitude	phase (deg)	vertical current moment magnitude	vertical current moment phase (deg)
1	114.975	132.1	114.975	132.1
2	265.531	360.	265.531	360.
3	240.04	225.4	240.04	225.4
4	85.7664	93.9	85.7664	93.9

Medium wave array vertical current moment (amps-degrees) rms
(Calculation assumes tower wires are grouped together.
The first wire of each group must contain the source.)

tower	magnitude	phase (deg)	normalized values
1	114.975	132.1	0.433 / 132.1
2	265.531	360.	1.0 / 0
3	240.04	225.4	0.904 / -134.6 (+225.4)
4	85.7664	93.9	0.323 / 93.9

Item 5

Array Geometry – KCHN

Per the provisions of the Commission's Public Notice DA 09-2340, October 29, 2009, paragraph 5, licensed stations applying to be re-licensed under the MM Docket 93-177 Rules are exempt from the requirement to submit an as-built surveyor's certification when there is no change in the theoretical patterns, as is the case in this application.

Item 6

Sampling System Measurements

Impedance measurements were made of the antenna monitor sampling system using a Hewlett Packard 8751A network analyzer in a calibrated measurement system. The measurements were made looking into the antenna monitor ends of the sampling lines for two conditions – with and without the sampling lines connected to the sampling transformers at the antenna tuning units.

The following table shows the frequency closest to the carrier frequency where series resonance – zero reactance corresponding with low resistance – was found. As frequencies of resonance occur at odd multiples of 90 degrees electrical length, the sampling line length at the resonant frequency below carrier frequency – which is the closest one to the carrier frequency – was found to be 90 electrical degrees. The electrical length at carrier frequency appearing in the table below was calculated by ratioing the carrier frequency to the resonant frequency.

Tower	Sampling Line Open-Circuited Resonance (kHz)	Sampling Line Electrical Length at 1050 kHz (Degrees)	1050 kHz Measured Impedance with Sample Transformer Connected
Tower 1	560.75	168.52	49.7 +J1.02
Tower 2	560.75	168.52	49.2 +J0.8
Tower 3	560.45	168.605	49.03 +J0.83
Tower 4	562.087	168.12	48.7 +J0.33

The sampling line lengths meet the requirement that they be equal in length within 1 electrical degree.

The characteristic impedance was calculated using the following formula, where R1 + jX1 and R2 + jX2 are the measured impedances of the +45 and -45 degree offset frequencies respectively:

$$Zo = ((R^2 + X^2)^{1/2} \times (R^2 + X^2)^{1/2})^{1/2}$$

Tower	-45° Offset Frequency (kHz)	-45° Measured Impedance (Ohms)	+45° Offset Frequency (kHz)	+45° Measured Impedance (Ohms)	Calculated Characteristic Impedance (Ohms)
1	280.375	0.1 -J50.04	841.125	4.7 +J49.42	50.09
2	280.375	0.84 -J50.45	841.125	4.95 +J49.79	50.25
3	280.225	0.8 -J50.116	840.675	4.7 +J49.35	49.74
4	280.0435	0.85 -J50.13	843.1305	4.7 +J49.57	49.96

The sampling line measured characteristic impedances meet the requirement that they be equal impedance within 2 Ohms.

Item 7

Reference Field Strength Measurements

Reference field strength measurements were made along radials of three of the eight pattern inflection azimuths per inquiry and approval by the MB staff. The measured field strengths, point descriptions, and measured coordinates (NAD-83) are shown on the following page.

REFERENCE POINT MEASUREMENTS
KCHN BROOKSHIRE, TX

340. 5 degrees	Lat.	Long.	mV/m	Time	Date	Description
4.17 km	29°54'53.95"N	96° 3'1.30"W	1.12	1415	10-Sep	FM 529 - MP from last proof - N. side of road opp. mailboxes
6.97 km	29°56'19.62"N	96° 3'36.36"W	1.25	1437	10-Sep	RC model airport - on ROW along W. side of prop. Between quanset hut & shed
12.29 km	29°59'2.12"N	96° 4'42.83"W	1.00	1453	10-Sep	Addie Gee Rd. - MOR @ fence row - .5 mi. from FM 1887
20.26 km	30° 3'5.76"N	96° 6'22.66"W	0.255	1506	10-Sep	W. side of FM 159 - next to bridge rail
27.16 km	30° 6'37.03"N	96° 7'49.49"W	<100 uV	1521	10-Sep	S. of Austin Branch Rd. @ Union Soldiers Cemetery marker
251.2 degrees						
5.35 km	29°51'51.04"N	96° 5'15.95"W	0.62	1719	10-Sep	Diemer Rd. - MP from last proof - MOR - bad null
8.66 km	29°51'15.72"N	96° 7'15.27"W	0.52	1632	10-Sep	. 7 km S. of Vierick Rd. - between cotton fields
12.16 km	29°50'39.26"N	96° 9'18.37"W	0.32	1619	10-Sep	int. of Peters-San Felipe & Grubbs Rd. - W. corner of yard between telco pedestal & water conn.
13.74 km	29°50'22.83"N	96°10'13.82"W	0.36	1608	10-Sep	E. side of SH 36 approx 100 feet S. of int.
19.53 km	29°49'22.23"N	96°13'38.07"W	0.24	1549	10-Sep	on FM 1094 - N. of driveway w/ double steel gate
111.6 degrees						
3.59 km	29°52'3.44"N	96° 0'4.56"W	108.0	1429	12-Sep	FM 359 - W. side of rd. .04 S. of bridge rail
7.92 km	29°51'11.94"N	95°57'34.73"W	53.0	1451	12-Sep	FM 362 - E. side of rd. @ telco pedestal
15.14 km	29°49'45.75"N	95°53'24.51"W	26.0	1511	12-Sep	FM 2855 - W. side of rd. - .1 mi. S. of driveway to dump
24.36 km	29°47'55.51"N	95°48'5.10"W	14.2	1524	12-Sep	Lakecrest Manor Dr. - subdivision entrance - on grass esplanade
31.16 km	29°46'34.05"N	95°44'9.65"W	7.9	1555	12-Sep	Kingsland @ Westgreen - in parking lot driveway - approx 80 feet W. of Westgreen

Measurement made using FIM-41 sn. 1274 calibrated 26 March 2001
Calibration checked and within manufacturer's stated accuracy
on Oct 14, 2015 against FIM-21 sn. 318, calibrated 6 Oct 2015
Measurements made by George Schank, who is experienced and qualified
in the use of the instrument for this purpose.

Item 8

Direct Measurement of Power - KCHN

Common point impedance measurements were made with an HP-8751A network analyzer in a calibrated measurement system. The measurements were made at the phasor cabinet input adjacent to the common point current meter used to determine operating power. The impedance measured at this point was adjusted to a value of 50 ohms +/- j0 for the common point network. The licensed power is 410 watts, and with the 8% adjustment factor from 73.51(b)(1) the operating power is 443 watts, resulting in a common point current of 2.976 amperes, which has been rounded to 2.98 amperes on previous KCHN licenses.

Item 9

Antenna Monitor and Sampling System

The antenna monitor is a Potomac Instruments model AM-1901. The sample transformers are connected through equal lengths of Andrew 3/8 inch foam Heliax solid outer conductor transmission lines to the antenna monitor. The four sample lines are routed to the towers such that they are subject to similar environmental conditions.

The antenna monitor was checked by placing the output of one of the tower monitoring circuits to the antenna monitor inputs with a T connector. The three non-reference positions on the monitor read 0 degrees and a ratio of 1.000 .

The sample transformers were tested with the configuration above, connecting the Tower 2 (reference tower) sample transformer to the reference input of the monitor and alternately connecting the other three transformers to a non-reference input. With the amplitude reference level being 1.000 and the phase 0 degrees, the output levels and phases are as follows:

Transformer 1: 0.999 magnitude, phase +/- 0.0 degrees
Transformer 3: 0.999 magnitude, phase -0.1 degrees
Transformer 4: 0.999 magnitude, phase -0.3 degrees

All four transformers are Delta TCT-3 1.0 Volt/Amp devices. The manufacturer indicates these devices have an absolute magnitude accuracy of ±2% and absolute phase accuracy of ±3 degrees. All of these transformers have accuracies which exceed their factory specifications.

The serial numbers for the four transformers used in the KCHN sampling system are:

Tower 1: 16341; Tower 2: 17109; Tower 3: 17175; Tower 4: 17108

The sample transformers were then installed at the feed point in the antenna tuning units of their respective towers.

United States of America

FEDERAL COMMUNICATIONS COMMISSION

AM BROADCAST STATION LICENSE

Authorizing Official:

Official Mailing Address:

MULTICULTURAL RADIO BROADCASTING LICENSEE, LL
27 WILLIAM STREET
11TH FLOOR
NEW YORK NY 10005

Son Nguyen
Supervisory Engineer
Audio Division
Media Bureau

Grant Date: June 06, 2001

This license expires 3:00 a.m. local time, August 01, 2005.

Facility Id: 68124

Call Sign: KCHN

License File Number: BL-20010202ADZ

This License Covers Permit No.: BP-19950912AA

Subject to the provisions of the Communications Act of 1934, subsequent acts and treaties, and all regulations heretofore or hereafter made by this Commission, and further subject to the conditions set forth in this license, the licensee is hereby authorized to use and operate the radio transmitting apparatus herein described.

This license is issued on the licensee's representation that the statements contained in licensee's application are true and that the undertakings therein contained so far as they are consistent herewith, will be carried out in good faith. The licensee shall, during the term of this license, render such broadcasting service as will serve the public interest, convenience, or necessity to the full extent of the privileges herein conferred.

This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequency designated in the license beyond the term hereof, nor in any other manner than authorized herein. Neither the license nor the right granted hereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934. This license is subject to the right of use or control by the Government of the United States conferred by Section 606 of the Communications Act of 1934.

Hours of Operation: Daytime

Average hours of sunrise and sunset:
Local Standard Time (Non-Advanced)

Jan.	7:15 AM	5:45 PM	Jul.	5:30 AM	7:30 PM
Feb.	7:00 AM	6:15 PM	Aug.	5:45 AM	7:00 PM
Mar.	6:30 AM	6:30 PM	Sep.	6:15 AM	6:30 PM
Apr.	6:00 AM	6:45 PM	Oct.	6:30 AM	6:00 PM
May	5:30 AM	7:15 PM	Nov.	6:45 AM	5:30 PM
Jun.	5:15 AM	7:30 PM	Dec.	7:15 AM	5:30 PM

Callsign: KCHN License No.: BL-20010202ADZ

Name of Licensee: MULTICULTURAL RADIO BROADCASTING LICENSEE, LLC

Station Location: BROOKSHIRE, TX

Frequency (kHz): 1050

Station Class: D

Antenna Coordinates:

		Day			
Latitude:	N	29 Deg	52 Min	45 Sec	
Longitude:	W	96 Deg	02 Min	08 Sec	

Transmitter(s): Type Accepted. See Sections 73.1660, 73.1665 and 73.1670 of the Commission's Rules.

Nominal Power (kW): Day: 0.41

Antenna Input Power (kW): Day: 0.44

Antenna Mode: Day: DA

(DA=Directional Antenna, ND=Non-directional Antenna; CH=Critical Hours)

Current (amperes): Day: 2.98

Resistance (ohms): Day: 50

Antenna Registration Number(s):

Day:

Tower No.	ASRN	Overall Height (m)
1	1216804	
2	1216805	
3	1216807	
4	1216808	

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DESCRIPTION OF DIRECTIONAL ANTENNA SYSTEM

Theoretical RMS (mV/m/km): Day: 209.7

Standard RMS (mV/m/km):

Augmented RMS (mV/m/km): Day: 220.4

Q Factor: Day:

Theoretical Parameters:

Day Directional Antenna:

Tower No.	Field Ratio	Phasing (Deg.)	Spacing (Deg.)	Orientation (Deg.)	Tower Ref Switch *	Height (Deg.)
1	0.4330	132.100	0.0000	0.000	0	75.5
2	1.0000	0.000	82.2000	112.000	0	75.5
3	0.9040	-134.600	164.4000	111.600	0	75.5
4	0.3230	93.900	246.8000	111.800	0	75.5

* Tower Reference Switch
0 = Spacing and orientation from reference tower
1 = Spacing and orientation from previous tower

Augmentation Parameters:

Aug No.	Central Azimuth (Deg. T)	Span (Deg.)	Radiation at Central Azimuth (mV/m @ 1 km)
1	218.8	30.8	27.30

Day Directional Operation:

Twr. No.	Phase (Deg.)	Antenna Monitor Sample Current Ratio
1	132.2	0.432
2	0	1
3	-134.5	0.902
4	94	0.322

Antenna Monitor: POTOMAC INSTRUMENTS AM 1901

Sampling System Approved Under Section 73.68 of the Rules.

Monitoring Points:

Day Operation:

Radial (Deg. T)	Distance From Transmitter (kM)	Maximum Field Strength (mV/m)
4.7	4.2	5.37
17.5	4.25	3.16
203.4	4.08	3.2
251.2	5.35	1.98
307.3	3.9	3.69
340.5	4.16	1.8

Special operating conditions or restrictions:

1 The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency electromagnetic fields in excess of FCC guidelines.

2 Monitor Point #1: is on the left (north) side of Crump Ferry Road in line with a large tree with a "Y" in the trunk, also on the north side of the street.
Monitor Point #2: is on the right (southwest) side of Route 359 opposite power pole No. 75773, which is on the northeast side of road.
Monitor Point #3: is on the left(south) side of Garrett Road opposite cable pedestal No. 14-32R-10-1, which is on the north side of road.
Monitor Point #4: is on the right (east) side of Diemer Road centered between the double access gates leading to the field.
Monitor Point #5: is approximately 0.1 miles north of the bend, on the right (east) side of Sunny Side Road in line with the fence, which is on the west side of road.
Monitor Point #6 is on the right (north) side of Crump Ferry Road opposite mailboxes 101R and 101W, which are on the south side of the road.

*** END OF AUTHORIZATION ***

SECTION III - LICENSE APPLICATION ENGINEERING DATA

Name of Applicant

MULTICULTURAL RADIO BROADCASTING LICENSEE, LLC

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

[X] Station License [X] 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
KCHN	NOT APPLICABLE	1050	DAYTIME	DNA	0.410

2. Station location

State	City or Town
TEXAS	BROOKSHIRE

3. Transmitter location

State	County	City or Town	Street address (or other identification)
TEXAS	WALLER	NR. PATTISON	9807 S. BULLER ROAD

4. Main studio location

State	County	City or Town	Street address (or other identification)
TEXAS	HARRIS	HOUSTON	1782 W Sam Houston Pwy

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

State	County	City or Town	Street address (or other identification)
TEXAS	HARRIS	HOUSTON	1782 W Sam Houston Pwy

6. Has type-approved stereo generating equipment been installed? [ ] Yes [X] No

7. Does the sampling system meet the requirements of 47 C.F.R. Section 73.68? [X] Yes [ ] No [ ] Not Applicable

Attach as an Exhibit a detailed description of the sampling system as installed. Exhibit No. ENG. RPT.

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
NONE	2.98 A.

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
NONE	50.0 OHMS	NONE	+/- J0

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 W	NO	131.6	NO	0.439	NO	NO
2 CW	NIGHT	0	NIGHT	1.0	NIGHT	LONGER
3 CE	OPER-	-134.8	OPER-	0.889	OPER-	REQUIRED
4 E	ATION	90.2	ATION	0.306	ATION	

Manufacturer and type of antenna monitor: POTOMAC INSTRUMENTS AM-1901

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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.
UNIFORM CROSS SECTION GUYED VERTICAL TOWERS	60.0	61.0(1,3)60.7(2,4)	NOT LIGHTED	Exhibit No. DNA

Excitation [X] Series [ ] Shunt

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

North Latitude	West Longitude
29° 52' 45"	96° 02' 08"

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. NONE

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

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
TOWER REGISTRATIONS: 1216804, 1216805, 1216807, 1216808
TOWERS NOT LIGHTED OR PAINTED

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

NO CHANGE: SYSTEM RETUNED TO MM CALCULATED VALUES
ACU GROUNDING REFURBISHED AND IMPROVED

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)
BENJ. F. DAWSON III, P.E.	
Address (include ZIP Code)	Date
HATFIELD & DAWSON CONSULTING ENGINEERS 9500 GREENWOOD AVENUE NORTH SEATTLE, WA 98103 USA	OCTOBER 14, 2015
	Telephone No. (Include Area Code)
	206 783 9151

[ ] Technical Director
[X] Registered Professional Engineer
[ ] Chief Operator
[ ] Technical Consultant
[X] Other (specify) CONSULTING ENGINEER