Cooley

ORIGINAL

2018 APR -5 PM 2:39

John S. Logan
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April 4, 2018

Accepted / Filed

APR -4 2018

Federal Communications Commission
Office of the Secretary

VIA HAND DELIVERY

Marlene H. Dortch, Esquire
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

Attention: Stop Code 1800B
Audio Division

Re: KGYM(AM), Cedar Rapids, Iowa
Facility ID No. 9718
License Application (FCC Form 302) for Direct Measurement of Power

Dear Ms. Dortch:

On behalf of KZIA, Inc., licensee of radio station KGYM(AM), Cedar Rapids, Iowa, we hereby submit, in triplicate, the attached Form 302 license application for direct measurement of power.

Please inform me if any questions should arise in connection with this filing.

Respectfully submitted,

John S. Logan

JSL/vcd
Enclosure

Accepted / Filed

APR – 4 2018

Federal Communications Commission
Office of the Secretary

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. BZ-20180404AAX

SECTION I - APPLICANT FEE INFORMATION

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

KZIA, Inc.

MAILING ADDRESS (Line 1) (Maximum 35 characters)
1110 26th Avenue, SW

MAILING ADDRESS (Line 2) (Maximum 35 characters)

CITY	STATE OR COUNTRY (if foreign address)	ZIP CODE
Cedar Rapids	IA	52404

TELEPHONE NUMBER (include area code)	CALL LETTERS	OTHER FCC IDENTIFIER (If applicable)
319-363-2061	KGYM	9718

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): Direct measurement of power

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 KZIA, Inc.		
MAILING ADDRESS 1110 26th Avenue, SW		
CITY Cedar Rapids	STATE IA	ZIP CODE 52404

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
KGYM	Cedar Rapids, IA	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.

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	
Julie Hein	Julie Hein	
Title	Date	Telephone Number
Senior Vice President and COO	April 4, 2018	319-363-2061

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
KZIA, Inc.

PURPOSE OF AUTHORIZATION APPLIED FOR: (check one)

☐ Station License ☑ Direct Measurement of Power

1. Facilities authorized in construction permit

Call Sign	File No. of Construction Permit (if applicable)	Frequency (kHz)	Hours of Operation	Power in kilowatts	
				Night	Day
KGYM	Not Applicable	1600	Unlimited	5.0	5.0

2. Station location

State	City or Town
Iowa	Cedar Rapids

3. Transmitter location

State	County	City or Town	Street address (or other identification)
IA	Linn	Cedar Rapids	1534 Bertram Street

4. Main studio location

State	County	City or Town	Street address (or other identification)
IA	Linn	Cedar Rapids	1110 26th Avenue SW

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

State	County	City or Town	Street address (or other identification)
IA	Linn	Cedar Rapids	1110 26th Avenue SW

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. See Text

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
10.4 Amperes	16.0 Amperes
Measured antenna or common point resistance (in ohms) at operating frequency	**Measured antenna or common point reactance (in ohms) at operating frequency**
Night: 50 Day: 19.5	Night: +j5 Day: -j20

Antenna indications for directional operation

Towers	Antenna monitor Phase reading(s) in degrees		Antenna monitor sample current ratio(s)		Antenna base currents	
	Night	Day	Night	Day	Night	Day
#1 (South)	+99.9	---	0.518	---		
#2 (Center)	0.0	---	1.000	---		
#3 (North)	-128.3	---	0.375	---		

Manufacturer and type of antenna monitor: Potomac Instruments AM-1901 (FCC ID: IJ3PI1900)

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.
See Text	#1=105.7; #2=#3=110.9	#1=107.9;#2=114.0;#3=113.6	#1=108.9;#2=115.0;#3=114.6	Exhibit No. Does Not Apply

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	West Longitude
41 ° 58 ' 15 "	91 ° 32 ' 01 "

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. See Text

Also, if necessary for a complete description, attach as an Exhibit a sketch of the details and dimensions of ground system. Exhibit No. Does Not Apply

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

Not applicable. Application is for direct measurement of power.

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

No change in daytime or nighttime resistance.

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)
Jeremy D. Ruck	
Address (include ZIP Code) Jeremy Ruck & Associates, Inc. P.O. Box 415 Canton, IL 61520	Date November 30, 2017
	Telephone No. (Include Area Code) 309.647.1200 (email: jeremy@jeremyruck.com)

☐ Technical Director

☑ Registered Professional Engineer

☐ Chief Operator

☐ Technical Consultant

☐ Other (specify)

APPLICATION FOR DIRECT MEASUREMENT OF POWER

AM BROADCAST STATION
KGYM - CEDAR RAPIDS, IOWA
5.0 KW-U / DA-N
FACILITY ID: 9718

KZIA, INC.

JANUARY, 2017

JEREMY RUCK & ASSOCIATES, INC.
P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520
Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

APPLICATION FOR DIRECT MEASUREMENT OF POWER

The following engineering statement and attached exhibits have been prepared for **KZIA, Inc.** ("KZIA"), licensee of AM broadcast station KGYM at Cedar Rapids, Iowa, and are in support of their application for direct measurement of power.[1] This application is being filed following upgrades to the sampling system, and a retune of the nighttime directional pattern.

The KGYM sampling system complies with the requirements of Section 73.68 of the Commission's Rules. The sample from each tower is obtained through the use of Delta Electronics current sampling transformers. These transformers feed equal length sampling lines consisting of buried phase stabilized semi-flexible coaxial cable with solid outer conductors. Previously these samples were interpreted by a Potomac Instruments AM-19(204) type accepted phase monitor. This phase monitor, as part of this project, has been replaced with a type accepted Potomac Instruments AM-1901 (FCC ID: IJ3PI1900) phase monitor.

In addition to the upgrades to the phase monitor, the pattern has been adjusted slightly to fill in the nulls to the southwest. The 214 degree true radial is in the direction of the heavily traveled Interstate 380 corridor between Iowa City and Cedar Rapids. The pattern was re-tuned to allow for more signal in that direction. Following the adjustments, a partial proof of performance was completed on the nighttime array. The nighttime pattern has five monitored radials, and at least ten measurements were performed on each of these radials.

[1] The Facility ID for KGYM at Cedar Rapids, Iowa is 9718.

The attached data from the partial proof of performance shows the nighttime pattern to be in substantial compliance with the authorized augmented standard pattern. As a result of this adjustment, changes to the monitor point limits are suggested. There have been no changes in the appearance of the monitor points, owing to their rural locations, and so photographs have been omitted.

The radiators in the array are three self-supporting towers with a tapered cross sections. The center tower is utilized for daytime operation, and the self impedance of this tower was measured.[2] No changes to the resistance component of the impedance of this tower was observed. The common point impedance was set at 50+j5 ohms following the adjustment of the directional antenna pattern.

Tower #1, which is the south tower in the array, supports a receive antenna for the Studio-Transmitter Link system delivering program material. This antenna and associated transmission line utilize an isocoupler for isolation circuits to cross the base insulator.

[2] The impedance was measured through the use of a Delta Electronics OIB-3 operating impedance bridge with the antenna system in normal daytime mode.

SUMMARY OF PARTIAL PROOF OF PERFORMANCE FIELD INTENSITY MEASUREMENTS

AM Broadcast Station KGYM

Summary of Nighttime Directional Measurements

Radial Azimuth	1976 Non-D Inverse Field	Standard Pattern Inverse Field	Augmented Standard Pattern Inverse Field	1976 DA-N Inverse Field by Plot	DA-N 2017/1976 Direct Ratio	DA-N 2017/1976 Log Ratio	2017 DA-N Inverse Field by Direct Ratio	2017 DA-N Inverse Field by Log Ratio
84	884.95	162.52	162.52	109.41	1.3719	1.3519	150.09	147.92
116	756.23	195.12	225.31	204.34	0.6538	0.6464	133.59	132.08
135.5	788.41	227.28	241.40	209.17	0.9544	0.9380	199.64	196.19
154.5	836.68	196.54	217.26	165.73	1.0258	0.9192	170.01	152.34
214	884.95	440.83	439.80	362.03	1.1133	1.1058	403.06	400.33

Bold Faced Type Indicated Azimuth of Monitor Point Radials.

Jeremy Ruck & Associates, Inc.
P.O. Box 415 / 221 S. 1st Avenue
Canton, Illinois 61520
309.647.1200

PARTIAL PROOF OF PERFORMANCE FIELD STRENGTH MEASUREMENTS

RADIO STATION KGYM — Cedar Rapids, Iowa — 84 Degrees True DA-N

Point Number	km Distance	1976 Proof of Performance Date 1976	Time CDT	Field mV/m	2017 Partial Proof of Performance Date 2017	Time CST	Field mV/m	2017/1976 After/Before Ratio	Log Ratio
1	2.30	18-Jul	0848	31	16-Nov	1119	40.0	1.2903	0.1107
2	2.93	18-Jul	0851	26.5	16-Nov	1128	32.0	1.2075	0.0819
3	4.34	18-Jul	0855	17.5	16-Nov	1134	19.9	1.1371	0.0558
4	5.10	18-Jul	0859	11.5	16-Nov	1142	19.2	1.6696	0.2226
5	7.13	18-Jul	0905	9.3	16-Nov	1150	11.8	1.2688	0.1034
6	9.12	18-Jul	0909	6.4	16-Nov	1157	8.25	1.2891	0.1103
7	9.44	18-Jul	0910	4.7	16-Nov	1200	4.70	1.0000	0.0000
8	10.57	18-Jul	0912	3.75	16-Nov	1208	5.75	1.5333	0.1856
9	13.15	18-Jul	0917	2.75	16-Nov	1218	4.27	1.5527	0.1911
10	13.93	18-Jul	0919	2.40	16-Nov	1222	4.25	1.7708	0.2482
							Averages:	1.3719	1.3519

Standard Pattern Inverse Field:	162.52	mV/m at 1 km
Augmented Standard Pattern Inverse Field:	162.52	mV/m at 1 km
Inverse Field Based on 1976 Nighttime Proof of Performance:	109.41	mV/m at 1 km
2017 Inverse Field Based on Direct Ratio	150.10	mV/m at 1 km
2017 Inverse Field Based on Logarithmic Ratio	147.92	mV/m at 1 km

Point Number 1 is the Monitor Point for this Radial

Jeremy Ruck & Associates, Inc.
P.O. Box 415 / 221 S. 1st Avenue
Canton, IL 61520
309.647.1200

PARTIAL PROOF OF PERFORMANCE FIELD STRENGTH MEASUREMENTS

RADIO STATION KGYM — Cedar Rapids, Iowa — 116 Degrees True DA-N

Point Number	km Distance	1976 Proof of Performance Date 1976	Time CDT	Field mV/m	2017 Partial Proof of Performance Date 2017	Time CST	Field mV/m	2017/1976 After/Before Ratio	Log Ratio
1	2.09	16-Jul	0945	73	17-Nov	0945	50	0.6849	-0.1644
2	3.83	16-Jul	0950	31.5	17-Nov	0951	21.5	0.6825	-0.1659
3	4.23	16-Jul	0952	18.5	17-Nov	1003	12.8	0.6919	-0.1600
4	6.05	16-Jul	0954	14.5	17-Nov	1007	8.4	0.5793	-0.2371
5	7.45	16-Jul	0956	10.5	17-Nov	1012	6.0	0.5714	-0.2430
6	7.77	16-Jul	0958	9.4	17-Nov	1015	5.8	0.6170	-0.2097
7	9.24	16-Jul	1001	7.0	17-Nov	1022	5.3	0.7571	-0.1208
8	9.77	16-Jul	1002	8.4	17-Nov	1036	4.0	0.4762	-0.3222
9	10.10	16-Jul	1004	10.0	17-Nov	1027	8.5	0.8500	-0.0706
10	10.62	16-Jul	1006	7.8	17-Nov	1038	4.5	0.5769	-0.2389
11	10.88	16-Jul	1010	7.1	17-Nov	1041	5.0	0.7042	-0.1523
							Averages:	0.6538	0.6464

Standard Pattern Inverse Field:	195.12	mV/m at 1 km
Augmented Standard Pattern Inverse Field:	225.31	mV/m at 1 km
Inverse Field Based on 1976 Nighttime Proof of Performance:	204.34	mV/m at 1 km
2017 Inverse Field Based on Direct Ratio	133.59	mV/m at 1 km
2017 Inverse Field Based on Logarithmic Ratio	132.08	mV/m at 1 km

Point Number 1 is the Monitor Point for this Radial

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PARTIAL PROOF OF PERFORMANCE FIELD STRENGTH MEASUREMENTS

RADIO STATION KGYM — Cedar Rapids, Iowa — 135.5 Degrees True DA-N

Point Number	km Distance	1976 Proof of Performance Date 1976	Time CDT	Field mV/m	2017 Partial Proof of Performance Date 2017	Time CST	Field mV/m	2017/1976 After/Before Ratio	Log Ratio
1	1.71	13-Jul	1154	105	16-Nov	1442	116	1.1048	0.0433
2	2.62	13-Jul	1157	52	16-Nov	1437	51.5	0.9904	-0.0042
3	5.00	13-Jul	1202	27	16-Nov	1429	23.0	0.8519	-0.0696
4	6.76	13-Jul	1205	20	16-Nov	1423	11.7	0.5850	-0.2328
5	8.24	13-Jul	1210	11.5	16-Nov	1416	11.7	1.0174	0.0075
6	8.40	13-Jul	1212	11.0	16-Nov	1412	10.9	0.9909	-0.0040
7	9.94	13-Jul	1215	9.4	16-Nov	1407	8.10	0.8617	-0.0646
8	10.96	13-Jul	1219	8.4	16-Nov	1355	8.40	1.0000	0.0000
9	12.60	13-Jul	1223	6.6	16-Nov	1328	5.50	0.8333	-0.0792
10	15.01	13-Jul	1227	3.4	16-Nov	1336	4.42	1.3000	0.1139
11	15.32	13-Jul	1229	4.1	16-Nov	1338	3.95	0.9634	-0.0162
							Averages:	0.9544	0.9380

Standard Pattern Inverse Field:	227.28	mV/m at 1 km
Augmented Standard Pattern Inverse Field:	241.40	mV/m at 1 km
Inverse Field Based on 1976 Nighttime Proof of Performance:	209.17	mV/m at 1 km
2017 Inverse Field Based on Direct Ratio	199.64	mV/m at 1 km
2017 Inverse Field Based on Logarithmic Ratio	196.19	mV/m at 1 km

Point Number 1 is the Monitor Point for this Radial

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309.647.1200

PARTIAL PROOF OF PERFORMANCE FIELD STRENGTH MEASUREMENTS

RADIO STATION KGYM — Cedar Rapids, Iowa — 154.5 Degrees True DA-N

Point Number	km Distance	1976 Proof of Performance Date 1976	Time CDT	Field mV/m	2017 Partial Proof of Performance Date 2017	Time CST	Field mV/m	2017/1976 After/Before Ratio	Log Ratio
1	1.82	16-Jul	1627	72	17-Nov	1501	49	0.6806	-0.1671
3	2.06	16-Jul	1630	54	17-Nov	1504	40	0.7407	-0.1303
4	3.43	16-Jul	1636	25.5	17-Nov	1450	19	0.7451	-0.1278
5	5.63	16-Jul	1640	13	17-Nov	1447	10.5	0.8077	-0.0928
6	5.99	16-Jul	1643	12.5	17-Nov	1445	10.0	0.8000	-0.0969
7	6.85	16-Jul	1645	9.3	17-Nov	1440	5.2	0.5591	-0.2525
8	10.41	16-Jul	1655	1.6	17-Nov	1429	4.7	2.9375	0.4680
9	11.78	16-Jul	1659	2.15	17-Nov	1421	1.8	0.8372	-0.0772
10	14.09	16-Jul	1703	1.55	17-Nov	1411	1.65	1.0645	0.0272
11	15.48	16-Jul	1707	1.40	17-Nov	1405	1.5	1.0714	0.0300
12	17.38	16-Jul	1712	1.25	17-Nov	1359	1.3	1.0400	0.0170
							Averages:	1.0258	0.9192

Standard Pattern Inverse Field:	196.54	mV/m at 1 km
Augmented Standard Pattern Inverse Field:	217.26	mV/m at 1 km
Inverse Field Based on 1976 Nighttime Proof of Performance:	165.73	mV/m at 1 km
2017 Inverse Field Based on Direct Ratio	170.01	mV/m at 1 km
2017 Inverse Field Based on Logarithmic Ratio	152.34	mV/m at 1 km

Point Number 1 is the Monitor Point for this Radial

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309.647.1200

PARTIAL PROOF OF PERFORMANCE FIELD STRENGTH MEASUREMENTS

RADIO STATION KGYM — Cedar Rapids, Iowa — 214 Degrees True DA-N

Point Number	km Distance	1976 Proof of Performance Date 1976	Time CDT	Field mV/m	2017 Partial Proof of Performance Date 2017	Time CST	Field mV/m	2017/1976 After/Before Ratio	Log Ratio
1	2.46	16-Jul	1329	110	16-Nov	1607	109	0.9909	-0.0040
2	2.62	16-Jul	1330	94	16-Nov	1503	92.4	0.9830	-0.0075
3	4.78	16-Jul	1335	36.5	16-Nov	1511	47.0	1.2877	0.1098
4	5.28	16-Jul	1337	30.5	16-Nov	1516	30.4	0.9967	-0.0014
5	6.16	16-Jul	1340	27	16-Nov	1522	25.5	0.9444	-0.0248
6	6.66	16-Jul	1343	20.5	16-Nov	1527	26.2	1.2780	0.1065
7	7.43	16-Jul	1346	20.5	16-Nov	1530	22.3	1.0878	0.0366
8	8.95	16-Jul	1350	17.5	16-Nov	1537	19.6	1.1200	0.0492
9	10.27	16-Jul	1353	15	16-Nov	1542	15.4	1.0267	0.0114
10	10.78	16-Jul	1356	13	16-Nov	1546	16.7	1.2846	0.1088
11	12.29	16-Jul	1359	7.7	16-Nov	1551	9.60	1.2468	0.0958
							Averages:	1.1133	1.1058

Standard Pattern Inverse Field:	440.83	mV/m at 1 km
Augmented Standard Pattern Inverse Field:	439.80	mV/m at 1 km
Inverse Field Based on 1976 Nighttime Proof of Performance:	362.03	mV/m at 1 km
2017 Inverse Field Based on Direct Ratio	403.06	mV/m at 1 km
2017 Inverse Field Based on Logarithmic Ratio	400.33	mV/m at 1 km

Point Number 1 is the Monitor Point for this Radial

Jeremy Ruck & Associates, Inc.
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Monitor Point Descriptions

The following text provides updates to the monitor point descriptions due to different nominal field strength values at the monitor points, and suggested limits for the monitor points. There have been no changes in the appearance of the monitor points, and as a result, photographs have not been included with the descriptions.

Description of 84 Degree True Monitor Point

At the entrance of the transmitter site, turn left (north) and proceed for 0.31 miles to the intersection of Bertram Street with Mt. Vernon Road. Turn right (east) on Mt. Vernon Road and proceed for 1.25 miles to O'Connor Road. Turn right (south) on O'Connor Road and proceed for 0.2 miles to the monitor point. The monitor point is located on the west side of the road at a field line. This location is point number 1 on the 84 degree true radial and is located 2.30 kilometers (1.43 miles) from the antenna. The GPS acquired coordinates of this monitor point are 41-58-22 North Latitude and 91-30-23 West Longitude by NAD27 datum. The nominal measured field intensity at this location is 40.0 mV/m, with a recommended limit of 43.3 mV/m.

Description of 116 Degree True Monitor Point

From the 84 degree true monitor point, proceed south approximately 0.3 miles to the "T" intersection of O'Connor Road with Arrowhead Road. Turn right (west) on Arrowhead Road and proceed for 0.25 miles to the intersection with Big Creek Road. Turn left (south) on Big Creek Road and proceed for 0.4 miles to the monitor point. The monitor point is located on the west side of the road just south of a tree line. This location is point number 1 on the 116 degree true radial and is located 2.09 kilometers (1.30 miles) from the antenna. The GPS acquired coordinates of this monitor point by NAD27 datum are 41-57-46 North Latitude and 91-30-41 West Longitude. The nominal measured field intensity at this location is 50 mV/m with no change requested to the current limit of 94.84 mV/m.

Description of 135.5 Degree True Monitor Point

From the 116 degree true monitor point, continue south and west along Big Creek Road for a distance of approximately 0.55 miles to the monitor point. The monitor point is on the north side of the road at a location which is along the same azimuth as the tower line. The directional array is clearly visible from this location. This location is point number 1 on the 135.5 degree true radial and is 1.71 kilometers (1.06 miles) from the array. The GPS acquired coordinates of this monitor point by the NAD27 datum are 41-57-37 North Latitude and 91-31-10 West Longitude. The nominal measured field intensity at this location is 116 mV/m with a recommended limit of 140 mV/m.

Description of 154.5 Degree True Monitor Point

From the 135.5 degree true monitor point, continue on Big Creek Road for 0.45 miles to the intersection with Holman's Road. Turn right (west) on Holman's Road and proceed 150 feet to the monitor point. The monitor point is located on the south side of the road. This location is point number 1 on the 154.5 degree true radial, and is 1.82 kilometers (1.13 miles) from the antenna. The GPS acquired coordinates of this location by NAD27 datum are 41-57-22 North Latitude and 91-31-28 West Longitude. The nominal measured field intensity at this location is 49 mV/m. No change in the current limit of 80.0 mV/m at this point is requested.

Description of 214 Degree True Monitor Point

From the 154.5 degree true monitor point, continue west on Big Creek Road for 0.25 miles to the intersection with Bertram Street. Turn left (south) on Bertram Street and proceed for 0.6 miles to Angle Street. Turn right (north) on Angle Street and proceed for 1 block to 2nd Street. Turn left (west) on 2nd Street and proceed for 0.57 miles to the intersection with Blaine's Crossing Road. Turn right (north) on Blaine's Crossing Road and proceed for 0.2 miles to the intersection with the four-lane highway of US 151 and Iowa State Route 13. Turn right (north) on US 151 and IA 13 and proceed for approximately 0.5 miles to the monitor point, which is next to mile marker 32 on the east side of the highway. This location is point number 1 on the 214 degree true radial and is 2.46 kilometers (1.53 miles) from the array. The GPS acquired coordinates of this location by NAD27 datum are 41-57-09 North Latitude and 91-33-03 West Longitude. The nominal measured field intensity at this location is 112 mV/m. No change in the current monitor point limit of 121 mV/m is requested.