

## TECHNICAL REPORT

This technical report has been developed in support of an application for a minor modification to KERL(FM) 297A at Cotton Plant, AR, FCC file no. BLH-20141103AFA. A one-step upgrade to channel 297C3 is submitted. The following exhibits are provided for the form 301 minor modification:

- E-1 KERL(FM) Spacing Study
- E-2 Fully-Spaced Reference Site Study
- E-3 Reference Site Aerial Photo
- E-4 Reference Site 23.24 km (70 dBu) Circle Plot
- E-5 Interference Contour Plots
- E-6 70 dBu Longley-Rice coverage of Cotton Plant, AR
- E-7 Tower ASR 1248817

### **KERL(FM) Spacing Study:**

KERL(FM) will be fully spaced at channel 297C3, with the exception to KQXF(FM) 297A at Osceola, AR and KXHT(FM) 296A at Marion, AR (Exhibit E-1). Both KQXF(FM) and KXHT(FM) are 73.215 short-spaced facilities. A fully-spaced reference site, aerial photo, and a 70 dBu (23.24 km) circle plot which encompasses the Cotton Plant, AR community of license is shown in exhibits E-2 to E-4. An interference plot to KQXF(FM) and KXHT(FM) shows the KERL(FM) modification will not produce any interference overlap to either facility (exhibit E-5).

### **KERL(FM) Antenna System:**

The facility will remain at its existing tower, ASR 1248817, at coordinates:

**34-58-07N 90-59-48W NAD27.**

A PSI FMR-6C six bay full-wavelength nondirectional antenna is mounted at a COR AGL of 97 meters, 160 meters AMSL, and will operate at an ERP of 14.0 kW.

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1519 Euclid Avenue  
Bowling Green, KY 42103

## **Community 70 dBu Coverage Based on Longley-Rice:**

The KERL(FM) modification will place a 70 dBu contour over the entire Cotton Plant community of license, shown in exhibit E-6, based on the use of Longley-Rice propagation prediction. The Longley-Rice predicted 70 dBu contour exceeds the FCC calculated 70 dBu contour by greater than the required 10%, and is contained within or limited to the extent of the FCC standard method prediction of the 60 dBu contour. The results of this analysis are tabulated below. The Longley-Rice “first occurrence” 70 dBu contour was calculated with the V-Soft Communications’ Probe 3 software and the FCC thirty (30) second terrain database.

<b>AZ°</b>	<b>60 dBu km</b>	<b>70 dBu km</b>	<b>70 dBu L-R km</b>	<b>% Diff.</b>
278	34.80	20.45	31.90	56.0
279	34.80	20.45	31.90	56.0
280	34.79	20.44	31.90	56.1
281	34.79	20.44	31.90	56.1
282	34.78	20.43	31.80	55.7
283	34.77	20.43	31.80	55.7

It is submitted that the Longley-Rice methodology may be used to show the 70 dBu coverage of Cotton Plant, AR, in accordance with the Commission’s rules.

## **RF Exposure Calculation:**

The RF production of the 14.0 kW six bay facility was calculated using the Commission’s FMMODEL program. The maximum RF at a height of 2 meters above ground was calculated to be 7.10  $\mu\text{Watts}/\text{cm}^2$  at a distance of 30 meters from the tower, which is below 5% of the 200  $\mu\text{Watts}/\text{cm}^2$  permissible for general public exposure, allowing exclusion from consideration.

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## **Conclusion:**

It is concluded that the minor modification of KERL(FM) is in full compliance with the Commission rules and policies.



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# E-1 KERL(FM) 297C3 Spacing Study

REFERENCE		CLASS = C3	DISPLAY DATES
34 58 07.0 N.		Current Spacings to 3rd Adj.	DATA 12-20-14
90 59 48.0 W.		Channel 297 - 107.3 MHz	SEARCH 12-20-14

Call	Channel	Location	Azi	Dist	FCC	Margin
KERL	LIC 297A	Cotton Plant	AR 0.0	0.00	141.5	-141.5
KQXF	LIC-N 297A	Osceola	AR 47.2	131.35	141.5	-10.2
KXHT	LIC-Z 296A	Marion	AR 75.5	84.74	88.5	-3.8 <b>(1)</b>
WMJW	LIC 298C3	Rosedale	MS 173.2	114.16	98.5	15.7
KFIN	LIC 300C1	Jonesboro	AR 14.0	94.97	75.5	19.5
KCNY	LIC 296C3	Greenbrier	AR 287.2	125.95	98.5	27.5
WHBQ-FM	LIC-N 298A	Germantown	TN 78.3	116.83	88.5	28.3
KDRS-FM	LIC-N 296A	Paragould	AR 16.9	123.14	88.5	34.6
KLAL	LIC-N 299C1	Wrightsville	AR 250.9	120.32	75.5	44.8

(1) The KERL(FM) one-step upgrade to 297C3 is to be designated as a 73.215 short-spaced facility with respect to the KQXF(FM) 297A and KXHT(FM) 296A 73.215 facilities.

# E-2 KERL(FM) 297C3 Fully-Spaced Reference Site

REFERENCE  
34 53 20.0 N.  
91 05 06.0 W.

CLASS = C3  
Current Spacings to 3rd Adj.

Channel 297 - 107.3 MHz

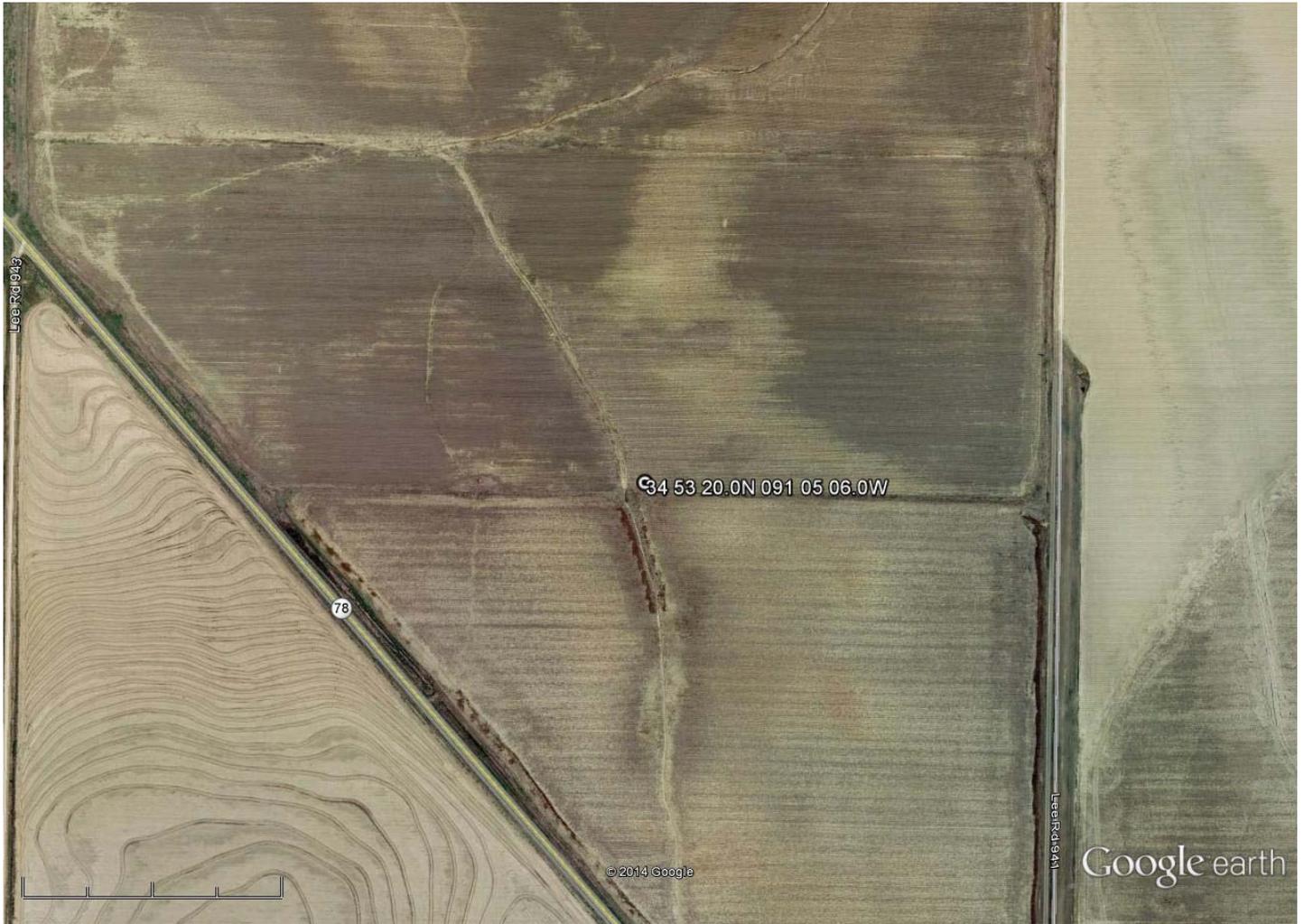
DISPLAY DATES  
DATA 12-20-14  
SEARCH 12-20-14

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Call	Channel	Location	Azi	Dist	FCC	Margin
KERL	LIC 297A	Cotton Plant	AR 42.2	11.97	141.5	-129.5
KQXF	LIC-N 297A	Osceola	AR 46.7	143.29	141.5	1.8
KXHT	LIC-Z 296A	Marion	AR 71.4	95.00	88.5	6.5
WMJW	LIC 298C3	Rosedale	MS 168.3	106.73	98.5	8.2
KCNY	LIC 296C3	Greenbrier	AR 292.3	121.32	98.5	22.8
KFIN	LIC 300C1	Jonesboro	AR 17.0	105.66	75.5	30.2
KLAL	LIC-N 299C1	Wrightsville	AR 253.9	109.96	75.5	34.5
WHBQ-FM	LIC-N 298A	Germantown	TN 75.0	126.72	88.5	38.2
KDRS-FM	LIC-N 296A	Paragould	AR 19.1	134.06	88.5	45.6

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All separation margins include rounding

E-3 KERL(FM) 297C3 Fully-Spaced Reference Point

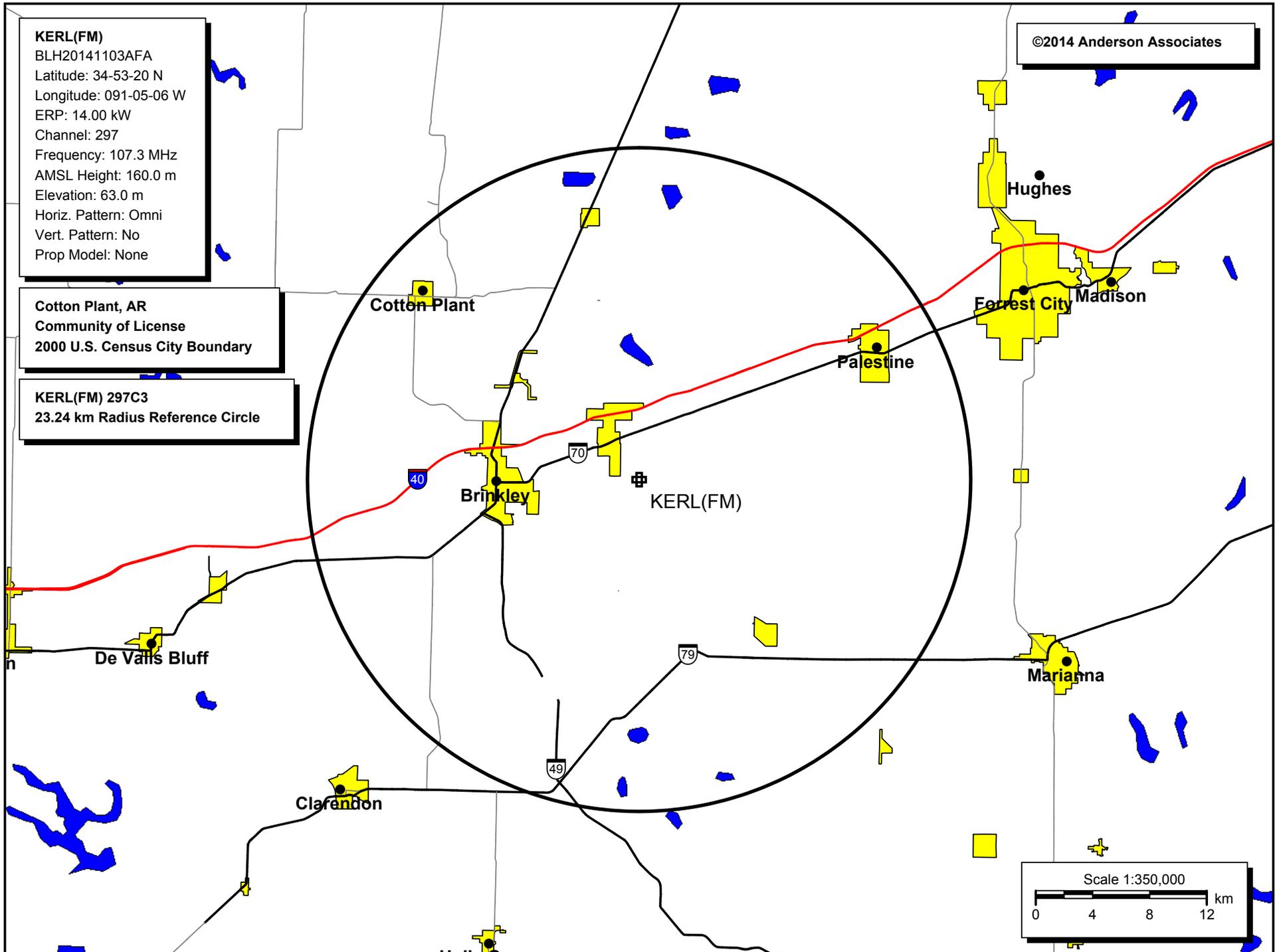


Google earth

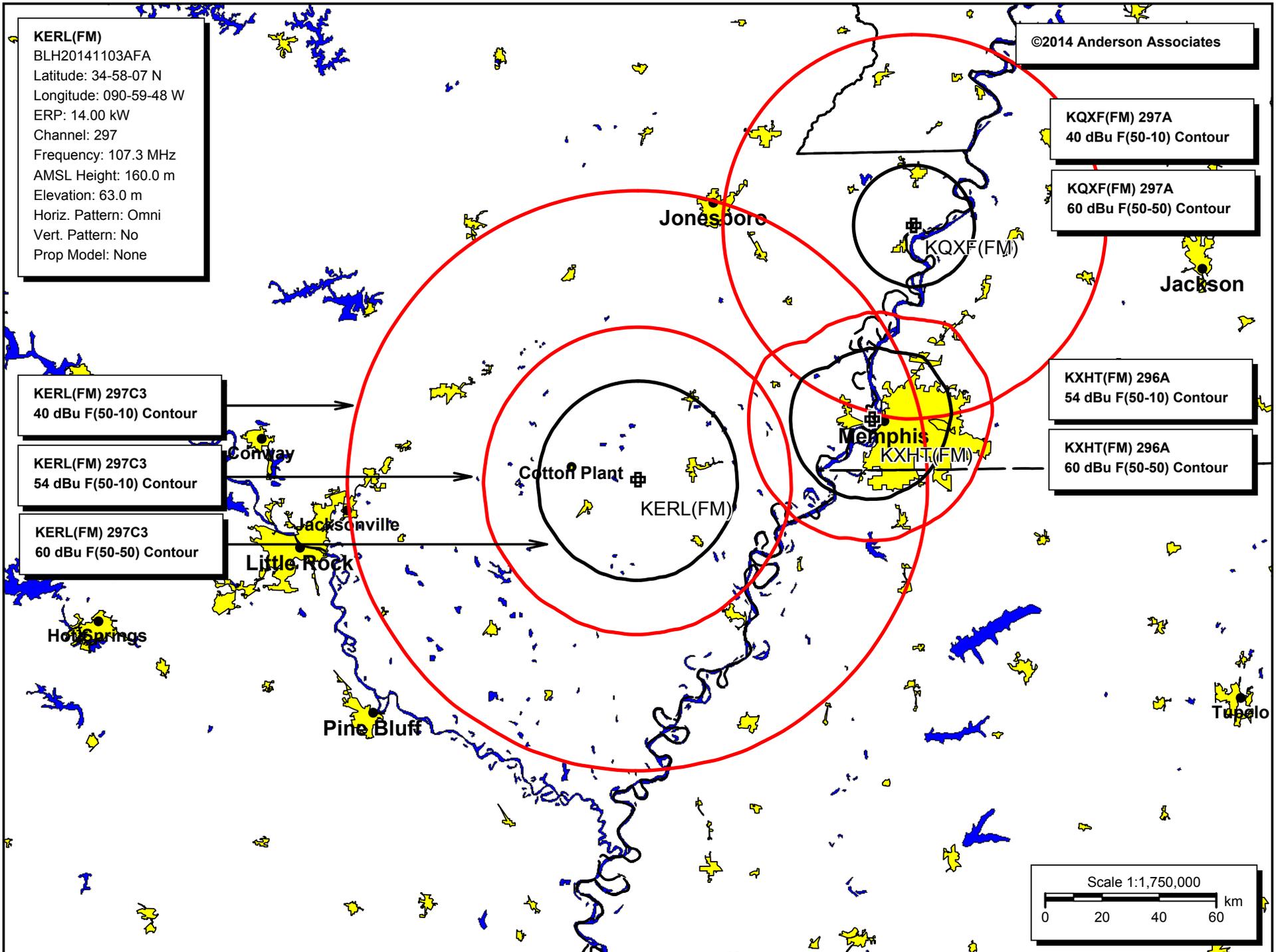
feet  
meters



# E-4 KERL(FM) 297C3 Reference Circle Plot



# E-5 KERL(FM) 297C3 Contour Plots



# E-6 KERL(FM) 297C3 Contour Plots

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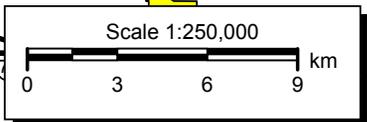
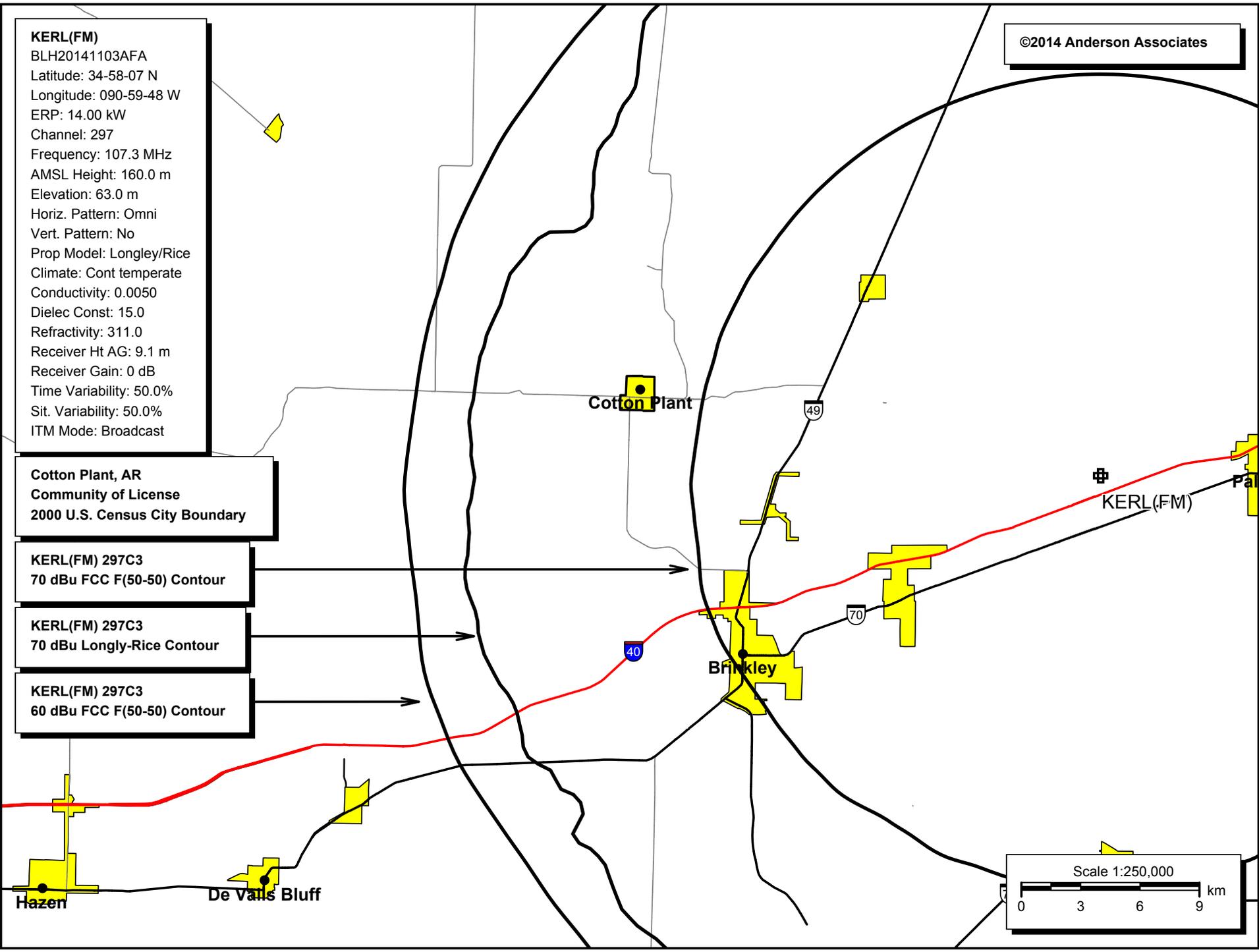
**KERL(FM)**  
BLH20141103AFA  
Latitude: 34-58-07 N  
Longitude: 090-59-48 W  
ERP: 14.00 kW  
Channel: 297  
Frequency: 107.3 MHz  
AMSL Height: 160.0 m  
Elevation: 63.0 m  
Horiz. Pattern: Omni  
Vert. Pattern: No  
Prop Model: Longley/Rice  
Climate: Cont temperate  
Conductivity: 0.0050  
Dielec Const: 15.0  
Refractivity: 311.0  
Receiver Ht AG: 9.1 m  
Receiver Gain: 0 dB  
Time Variability: 50.0%  
Sit. Variability: 50.0%  
ITM Mode: Broadcast

**Cotton Plant, AR**  
Community of License  
2000 U.S. Census City Boundary

**KERL(FM) 297C3**  
70 dBu FCC F(50-50) Contour

**KERL(FM) 297C3**  
70 dBu Longley-Rice Contour

**KERL(FM) 297C3**  
60 dBu FCC F(50-50) Contour



# E-7 KERL(FM) 297C3 Tower ASR

ASR Registration Search

## Registration 1248817

 [Map Registration](#)

### Registration Detail

Reg Number	1248817	Status	Constructed
File Number	A0604228	Constructed	07/22/2008
EMI	No	Dismantled	
NEPA	No		

### Antenna Structure

Structure Type TOWER - Free standing or Guyed Structure used for Commu

#### Location (in NAD83 Coordinates)

Lat/Long	34-58-07.0 N 090-59-48.0 W	Address	Forrest City, Arkansas
City, State	Forrest City , AR		
Zip	72372	County	ST. FRANCIS
Center of AM Array		Position of Tower in Array	

#### Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
62.8	106.4
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
169.2	106.4

### Painting and Lighting Specifications

FAA Chapters 4, 6, 12

Paint and Light in Accordance with FAA Circular Number 70/7460-1K

### FAA Notification

FAA Study	2005-ASW-41-OE	FAA Issue Date	01/25/2005
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### Owner & Contact Information

FRN	0017921164	Owner Entity Type	
Assignor FRN	0011328721	Assignor ID	L01028001

#### Owner

Caldwell Media, LLC	P: (870)318-7354
Attention To: Bradford Caldwell	F:
P.O. Box P.O. Box 711	E: bradfordcaldwell@yahoo.com
Wynne , AR 72396	

#### Contact

Caldwell , Bradford	P: (870)318-7354
P.O. Box P.O. Box 711	F:
Wynne , AR 72396	E: bradfordcaldwell@yahoo.com

### Last Action Status

Status	Constructed	Received	08/05/2008
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