

## **W224AZ Minor Modification**

This technical report is submitted for a minor modification to W224AZ at Chattanooga, TN. Changes in tower site and antenna are requested for the facility which will continue to serve as a fill-in to rebroadcast the primary WPLZ(FM) 237C3 HD3 signal at Ooltewah, TN, FCC facility I.D. 66956.

The following exhibits are provided for the FCC form 349 application:

- E-1 W224AZ channel study
- E1A WDEF-FM interference study
- E1B Aerial view of tower site
- E-2 60 dBu Plot within WPLZ(FM) and Overlap to W224AZ
- E-3 ASR 1043736

### **W224AZ Modification Analysis:**

Exhibit E-1 shows the W224AZ modification will be located within the second adjacent protected contour of WDEF-FM 222C0 at Chattanooga, TN, facility I.D. 57827. As a result, the interference ratio is utilized to determine the interference contour, in accordance with FCC-02-244, paragraph 12.

The WDEF-FM contour at the proposed site is 116.04 dBu and the resulting W224AZ +40 interfering F(50-10) dBu contour is 156.04 or 1.75 meters (see E1A). Clearly, the interfering contour will not reach the ground or any building or major highway from its mounting height of 155 meters AGL.

**Antenna System:**

W224AZ will be located at an existing tower, ASR no.1042155, and operate at 0.250 kW ERP at a COR AGL of 115 meters using a Jampro 6813 single bay JLPC-1 nondirectional antenna. The 60 dBu F(50-50) contour is completely contained within the primary WPLZ(FM) primary contour and overlaps the current W224AZ facility, as demonstrated in exhibit E-2.

**RF Exposure Calculation:**

The RF contribution from the 0.250 kW facility was calculated using the formula included below to be  $0.71 \mu\text{W}/\text{cm}^2$  or 0.4% of the permissible maximum general population exposure. This is well below 5% level that is excluded consideration.

$$S (\text{RF in } \mu\text{Watts}/\text{cm}^2) = \frac{33.4 (F^2 - \text{Vertical Factor}) \times (\text{H ERP} + \text{V ERP in Watts})}{R^2 (\text{distance to radiation center in meters} - 2 \text{ m})}$$

**Conclusion:**

It is concluded that the modification of W224AZ complies with all Commission rules and policies.



Charles M. Anderson 11-17-2014  
1519 Euclid Avenue  
Bowling Green, KY 42103  
270-782-0246

# E1 CHANNEL STUDY

REFERENCE  
35 07 33.0 N.  
85 17 25.0 W.

CH# 224D - 92.7 MHz, Pwr= 0.25 kw, HAAT= 116.9 M, COR= 442 M  
Average Protected F(50-50)= 13.89 km  
Omni-directional

DISPLAY DATES  
DATA 11-13-14  
SEARCH 11-14-14

CH CITY	CALL	TYPE STATE	ANT STATE	AZI <--	DIST FILE #	LAT LNG	PWR(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
222C0 Chattanooga	WDEF-FM	LIC _C_	TN	288.6 108.6	3.20 BMLH20050831ADG	35 08 06.0 85 19 25.0	100.000 360	13.8 833	92.1 Jackson Telecasters, Inc.	-17.7*	-90.0* (1)
224D Chattanooga	W224AZ	LIC _C_	TN	288.6 108.6	3.20 BLFT20140203AOE	35 08 06.0 85 19 25.0	0.250 303	82.3 680	27.5 Edgewater Broadcasting Inc	-86.2*	-48.0*
224A Harriman	WIJTV	LIC ZC_	TN	43.0 223.5	113.29 BLH20080428ABW	35 52 04.0 84 25 56.0	2.650 153	88.7 450	32.1 Progressive Media Inc.	5.6	23.1
226A Benton	WSAA	LIC _CX	TN	83.6 263.9	39.93 BLH20080828AAD	35 09 54.0 84 51 13.0	3.500 133	2.5 390	25.6 wsaa Llc	18.0	11.8
224L1 Blue Ridge	WXFC-LP	CP _	GA	107.7 288.3	91.88 BNPL20131108AFX	34 52 13.4 84 19 50.8	0.100 27	620	51.0 Fannin County Board Of Edu		23.3
224A Arab	WAFN-FM	LIC NCX	AL	230.7 50.1	136.28 BLH20120629ACR	34 20 40.6 86 26 23.3	1.150 202	76.2 470	25.9 Fun Media Group, Inc.	41.4	53.1
225C1 Atlanta	WZGC	LIC NC_	GA	149.0 329.5	170.55 BMLH20080226ABQ	33 48 26.0 84 20 21.8	66.000 340	102.0 612	70.1 Cbs Radio Inc. of Atlanta	48.9	71.1

Terrain database is USGS 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
In & Out distances between contours are shown at closest points. Reference zone= East Zone, Co to 3rd adjacent.  
All separation margins (if shown) include rounding  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
"\*"affixed to 'IN' or 'OUT' values = site inside protected contour.

(1) See E1A for disproof of interference to WDEF-FM.

## E1A WDEF-FM interference study

W224AZ

74.1204(d) Showing

Translator or LPFM Maximum Licensed ERP = 0.25

Translator or LPFM Antenna Height AG = 155 Meters

W224AZ Antenna Model = SHPX1F

Protected Station's Contour = 116.0421 dBu

Translator's or LPFM's full Interference contour 156.0421

Review Azimuth = 180 Degrees True

Relative Field on the horizon at Review Azimuth = 1.000

Translator/LPFM ERP on the horizon at Review Azimuth = 0.25 kW

Distance between stations = 3.2 km

Protected Station= WDEF-F, 100 kW, 743 M Meters COR AMSL

Depression Angle From Horizon(Deg)	Vertical Relative Field	Horizontal Relative Field	ERP (kw)	Dist to IX Contour Along Dep. Angle(m)	Dist to IX Contour From Tower Base(m)	Height IX Above Ground (m)
00.00	1.0	1.0	0.2500	001.7493	001.7493	155.000
05.00	0.993	1.0	0.2465	001.7371	001.7304	154.849
10.00	0.974	1.0	0.2372	001.7038	001.6779	154.704
15.00	0.941	1.0	0.2214	001.6461	001.5900	154.574
20.00	0.897	1.0	0.2012	001.5691	001.4745	154.463
25.00	0.843	1.0	0.1777	001.4747	001.3365	154.377
30.00	0.78	1.0	0.1521	001.3645	001.1817	154.318
35.00	0.709	1.0	0.1257	001.2403	001.0160	154.289
40.00	0.633	1.0	0.1002	001.1073	000.8482	154.288
45.00	0.554	1.0	0.0767	000.9691	000.6853	154.315
50.00	0.473	1.0	0.0559	000.8274	000.5319	154.366
55.00	0.394	1.0	0.0388	000.6892	000.3953	154.435
60.00	0.317	1.0	0.0251	000.5545	000.2773	154.520
65.00	0.245	1.0	0.0150	000.4286	000.1811	154.612
70.00	0.181	1.0	0.0082	000.3166	000.1083	154.702
75.00	0.124	1.0	0.0038	000.2169	000.0561	154.790
80.00	0.077	1.0	0.0015	000.1347	000.0234	154.867
85.00	0.041	1.0	0.0004	000.0717	000.0063	154.929
90.00	0.016	1.0	0.0001	000.0280	000.0000	154.972



E1B AERIAL VIEW OF  
INTERFERENCE AREA

W224AZ (224)

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Google earth

Google earth

feet  
meters

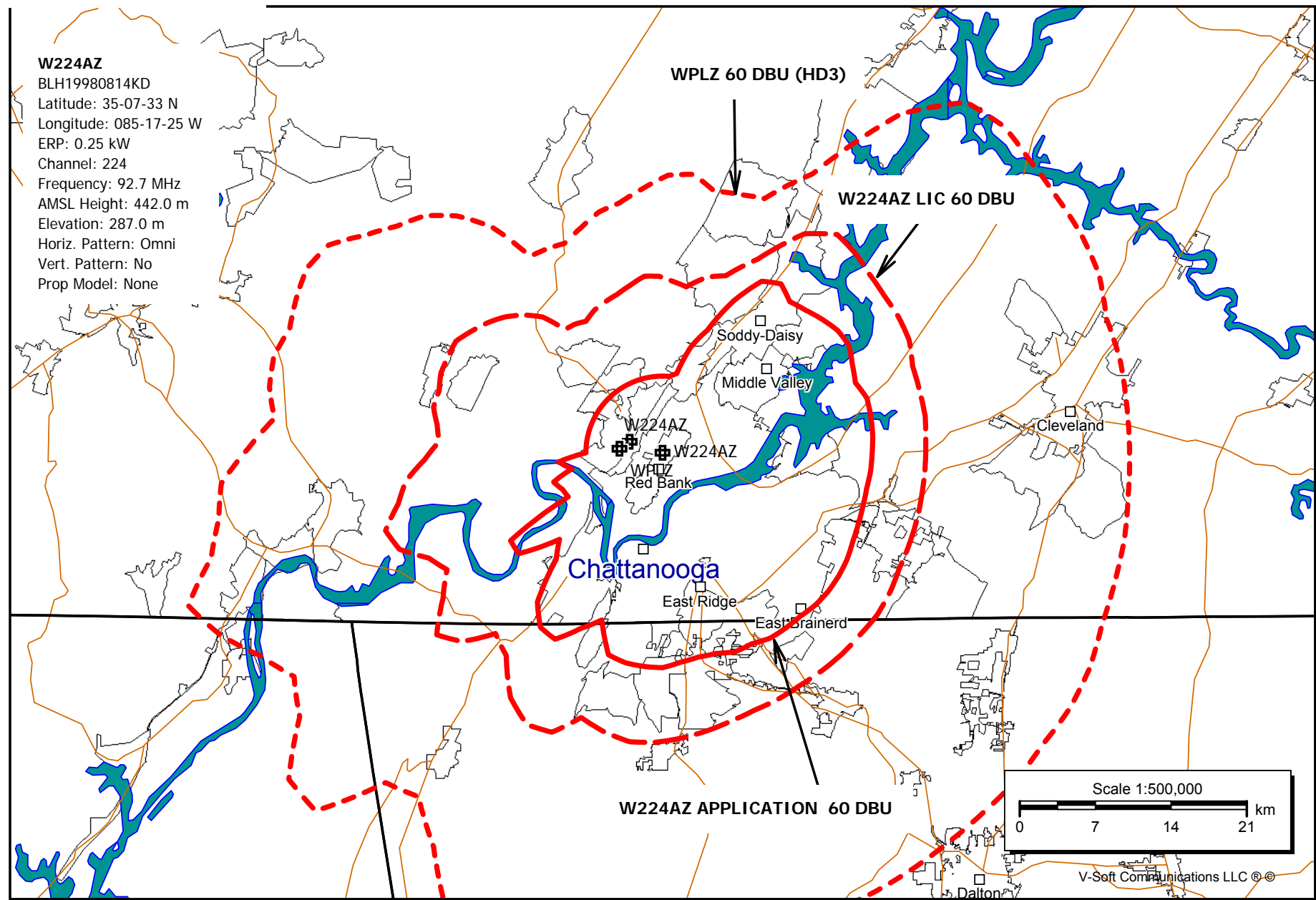
1000  
300





E2 60 DBU CONTOURS

Anderson Communications, LLC



# E3 Registration 1042155

 [Map Registration](#)

## Registration Detail

Reg Number	1042155	Status	Constructed
File Number	A0682126	Constructed	08/01/1998
EMI	No	Dismantled	
NEPA	No		

## Antenna Structure

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

### Location (in NAD83 Coordinates)

Lat/Long	35-07-33.5 N 085-17-24.8 W	Address	210 PINEHURST AVE
City, State	RED BANK , TN		
Zip	37415	County	HAMILTON
Center of AM Array		Position of Tower in Array	

### Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
287.4	175.3
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
462.7	173.7

## Painting and Lighting Specifications

FAA Chapters 4, 9, 12

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

### FAA Notification

FAA Study	2008-ASO-5326-OE	FAA Issue Date	06/04/2009
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## Owner & Contact Information

FRN	0016936163	Owner Entity Type
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### Owner

Crown Castle South LLC	P: (724)416-2000
2000 Corporate Drive	F:
Canonsburg , PA 15317	E: regulatory.department@crowncastle.com

### Contact

Verre , Chris	P: (336)643-2524
2000 Corporate Drive	F:
Canonsburg , PA 15317	E: Christine.Verre@crowncastle.com

## Last Action Status

Status	Constructed	Received	04/08/2010
Purpose	Notification	Entered	04/08/2010
Mode	Interactive		

## Related Applications

04/08/2010	A0682125	- Modification (MD)
04/08/2010	A0682126	- Notification (NT)
12/10/2008	A0616245	- Notification (NT)
Related applications (9)		

## Output from NADCON for station W224AZ

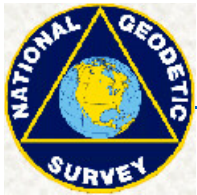
# North American Datum Conversion

NAD 83 to NAD 27

NADCON Program Version 2.11

Transformation #: 1                      Region: Conus

	Latitude	Longitude
NAD 27 datum values:	35 07 33.24111	85 17 24.94935
NAD 83 datum values:	35 07 33.50000	85 17 24.80000
NAD 27 - NAD 83 shift values:	-0.25889	0.14935(secs.)
	-7.978	3.781 (meters)
Magnitude of total shift:		8.829(meters)



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