

**Technical Report  
W222CZ Minor Modification  
Existing Mattoon Overlap Maintained**

This technical report is submitted for a minor modification to W222CZ, FCC facility I.D. 156061. A site move with corresponding changes in the antenna, COR AGL and ERP are submitted for the translator to continue to serve as a fill-in facility to rebroadcast WFKN(AM) 1220 kHz at Franklin, KY, FCC facility I.D. 24245.

**W222CZ Modification Analysis:**

An overlap study (exhibit E-1) shows the W222CZ modification has no outgoing interference overlaps to other facilities.

**§ 74.1233(a)(1) Mattoon waiver:**

This application requests continuation of the existing *Mattoon Waiver* in accordance with the waiver granted for the move of W263AQ (DA-11-1495). The proposed W222CZ facility is mutually exclusive with the formerly licensed W223DL facility because the proposed 54 dBu (50-10) interfering contour overlaps the original W223DL licensed 60 dBu (50-50) contour as demonstrated in exhibit E-2, and the 60 dBu F(50-50) contour is contained within the WFKN(AM) 2.0 mV/m daytime contour (exhibit E-3).

**Antenna System:**

The W222CZ modification will be located to the existing tower, ASR 1057739, at coordinates:

**36 44 21.0N 086 34 35.0W NAD 83.**

A Bext TFC-2K two bay, 1.0 wavelength-spaced, non-directional antenna will be

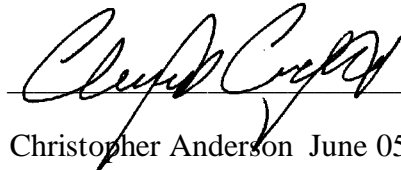
mounted at a COR AGL of 66.0 meters, 276.3 meters AMSL, 70.4 meter HAAT (exhibit E-4) and operate at 250 watts ERP.

**RF Exposure Calculation:**

The RF contribution was calculated using FMModel (exhibit E-5). The RF is calculated to be  $0.765 \mu\text{W}/\text{cm}^2$  at a distance of 36.2 meters from the base of the tower, which is less than 5% of the  $200 \mu\text{W}/\text{cm}^2$  maximum permissible for general public exposure, allowing exclusion from consideration.

**Conclusion:**

It is concluded the W222CZ modification complies with all Commission rules and policies.



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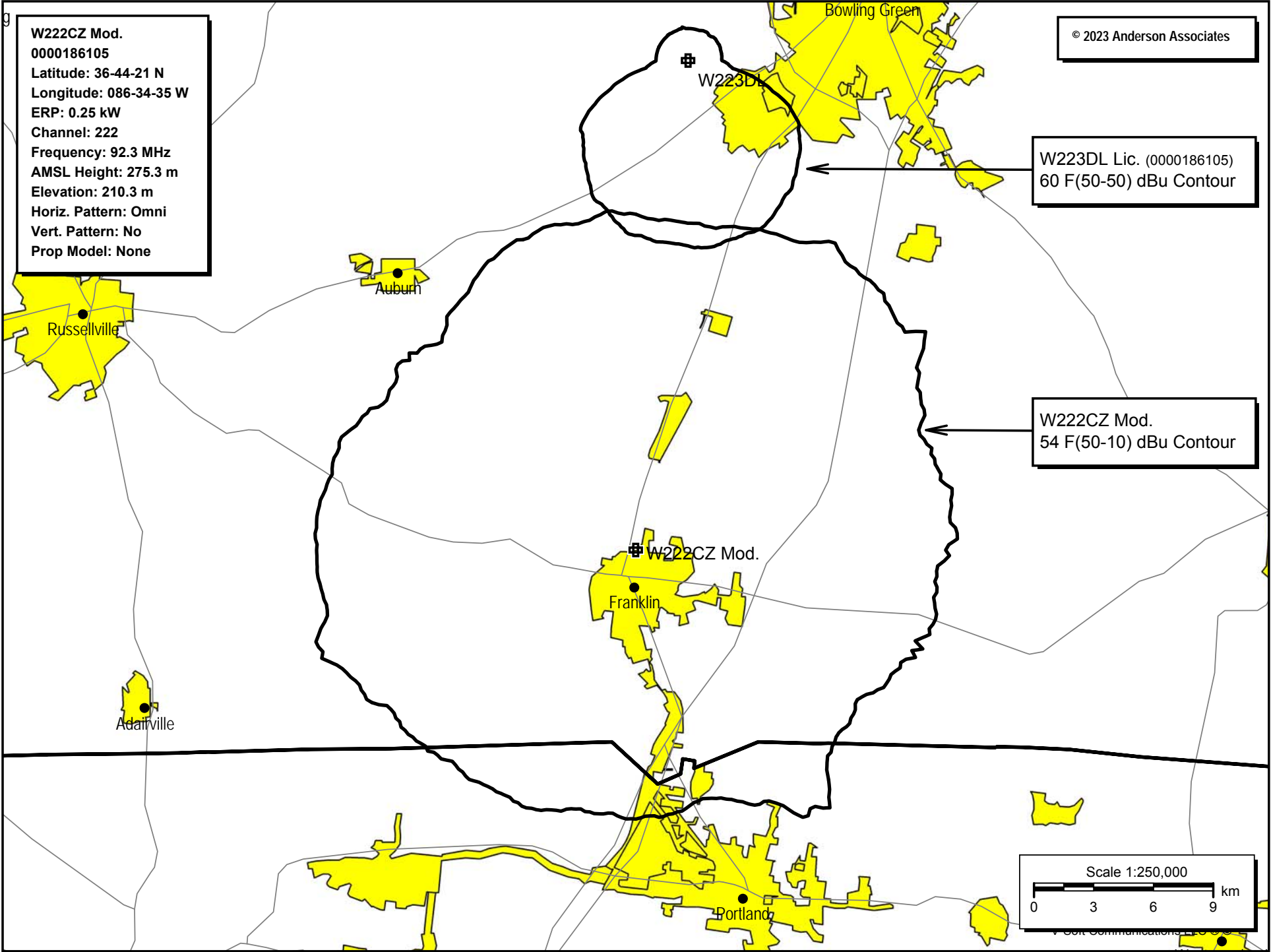
# E-1 W222CZ Mod. Overlap Study

REFERENCE		CH# 222D - 92.3 MHz, Pwr= 0.25 kW, HAAT= 70.4 M, COR= 276.3 M								DISPLAY DATES	
36 44 21.00 N.		Average Protected F(50-50)= 10.92 km								DATA 06-05-23	
86 34 35.00 W.		Omni-directional								SEARCH 06-05-23	
CH CITY	CALL	TYPE STATE	ANT	AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
222D Franklin	W222CZ	LIC _CN KY		15.2 195.2	3.05 0000199830	36 45 56.60 86 34 02.60	0.220 46	266	---Reference---	(1)	
223C Owensboro	WBKR	ALO _CN KY		336.5 156.2	105.47	37 36 29.20 87 03 15.00	100.000 600	136.6 732	91.9 -42.7*	-3.2	Townsquare Media Of Evansv
225C Nashville	WJXA	ALO _CN TN		207.1 26.9	77.20	36 07 14.20 86 58 07.00	100.000 600	13.9 785	92.3 53.1	-16.2*	Midwest Communications, In
223C Owensboro	WBKR	LIC _CN KY		336.5 156.2	105.47 BLH19870121KD	37 36 29.20 87 03 15.00	100.000 320	107.5 453	74.1 -13.5*	14.8	Townsquare Media Of Evansv
221A Goodlettsville	WQOK	LIC _CN TN		197.9 17.8	51.60 BLH20130125ACM	36 17 50.20 86 45 11.00	3.500 133	41.6 319	27.1 -0.1	10.5	Cumulus Licensing LLC
225C Nashville	WJXA	LIC _CN TN		207.1 26.9	77.20 BLH19861204KB	36 07 14.20 86 58 07.00	100.000 321	10.8 507	75.0 56.2	1.1	Midwest Communications, In
221L1 Bowling Green	WSGJ-LP	LIC _CN KY		21.6 201.7	31.35 BLL20170209ABN	37 00 04.50 86 26 46.20	0.100 2	170	11.3	8.3	Columbus Club, Inc.
219A Bowling Green	WWHR	LIC _CN KY		9.1 189.1	29.97 BLED20020813ABG	37 00 19.20 86 31 23.00	1.300 114	1.8 285	19.9 16.6	8.8	Western Kentucky Universi t
223D Brentwood	W223BV	LIC _CN TN		200.3 20.2	56.31 0000177663	36 15 49.80 86 47 38.90	0.250	35.2 526	23.3 11.2	18.9	Educational Media Foundati
222C0 Milan	WHHG	ALO _CN TN		245.4 64.1	218.40	35 54 06.20 88 46 55.20	100.000 450	186.9 579	83.3 20.0	97.0	Forever South Licenses, L
221A Tompkinsville	WTKY-FM	ALO _CN KY		90.9 271.5	79.76	36 43 27.20 85 40 52.90	6.000 100	44.0 365	28.3 24.5	35.4	Frank Keeton Aircasters, I
221A Tompkinsville	WTKY-FM	LIC NCN KY		83.6 264.1	82.18 BLH20030318ADL	36 49 07.20 85 39 31.80	5.300 107	45.2 372	28.6 26.2	36.6	Frank Keeton Aircasters, I
222D Bluhmtown	W222BZ	LIC DVN TN		150.8 331.2	111.06 BLFT20151230BHR	35 51 56.20 85 58 29.90	0.250	72.2 641	23.8 27.7	50.2	Middle Tennessee State Uni
222C0 Chattanooga	WDEF-FM	ALO _CN TN		147.3 328.1	211.00	35 08 06.30 85 19 24.90	100.000 450	167.6 834	68.6 32.1	103.8	Jackson Telecasters, Inc.
222C0 Milan	WHHG	LIC _CN TN		245.4 64.1	218.40 BMLH19970129KA	35 54 06.20 88 46 55.20	100.000 302	172.0 430	72.4 34.9	108.2	Forever South Licenses, L
222C0 Chattanooga	WDEF-FM	LIC _CN TN		147.3 328.1	211.00 BMLH20050831ADG	35 08 06.30 85 19 24.90	100.000 360	157.1 743	60.2 42.8	111.7	Jackson Telecasters, Inc.
222D Bluhmtown	W222BZ	CP _CN TN		168.5 348.6	100.98 0000197032	35 50 56.00 86 21 11.00	0.250	45.1 273	13.1 46.2	56.0	Middle Tennessee State Uni
220A Clarksville	WAPX-FM	LIC NCN TN		252.4 71.9	73.19 BLED20050303AAB	36 32 13.20 87 21 26.00	6.000 59	2.1 207	20.4 59.5	49.1	Austin Peay State Universi

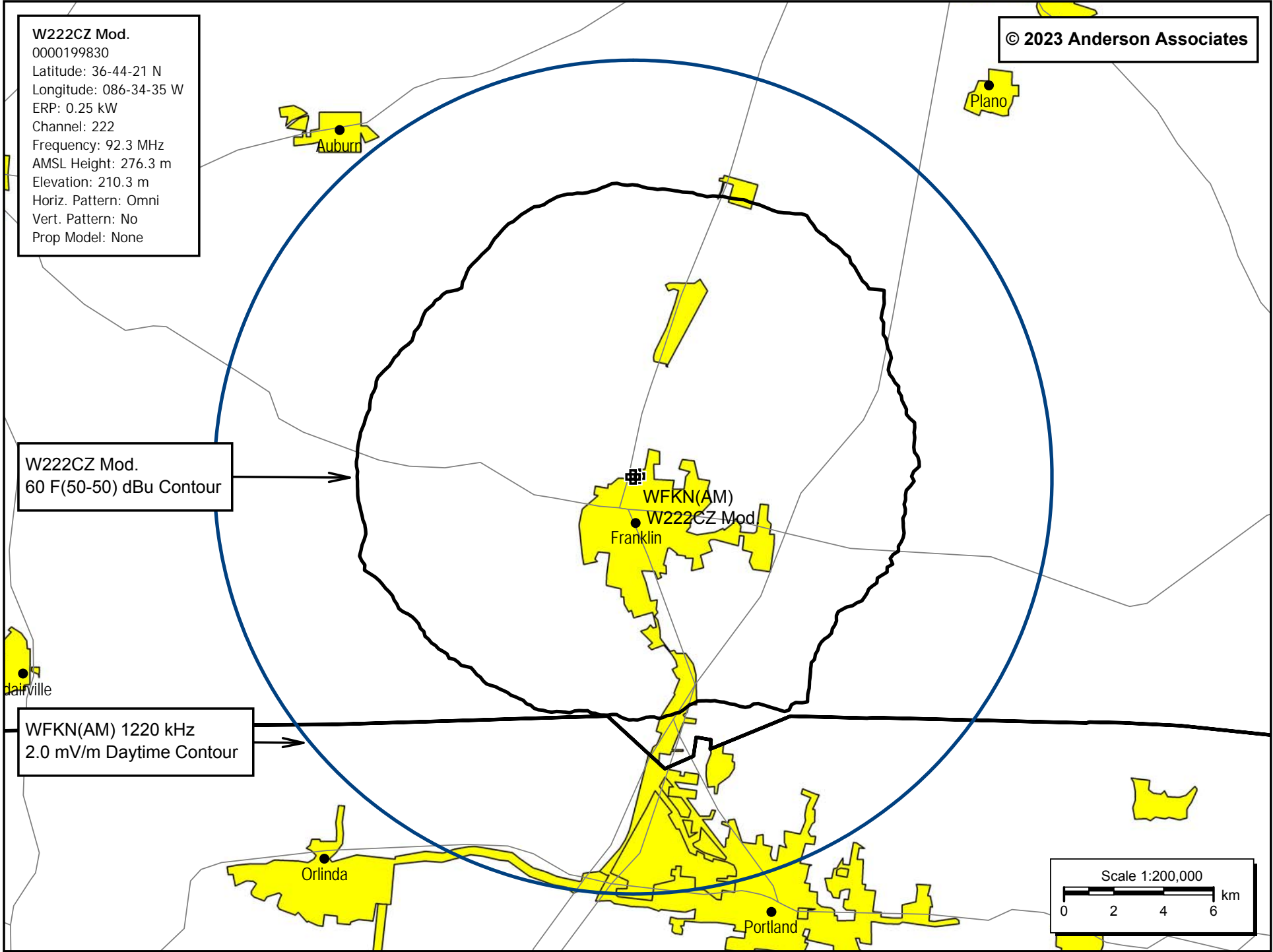
Terrain database is FCC 30 meter , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
 In & Out distances between contours are shown at closest points. Reference zone= East Zone, Co to 3rd adjacent.  
 All separation margins (if shown) include rounding.  
 Ant Column: (D= 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 restricted contour.  
 Reference station has protected zone issue: AM tower

(1) Note 60 dBu overlap to existing facility at a distance of 3.05 km.

E-2 W222CZ Mod. Overlap to formerly licensed W223DL Mattoon Plot



E-3 W222CZ Mod. 60 F(50-50) dBu Contour Plot



#### E-4 W222CZ Mod. HAAT Calculation

N. Lat. = 364421.0 W. Lng. = 863435.0

HAAT and Distance to Contour,

FCC, FM 2-10 Mi, 51 pts Method - FCC 30 Meter

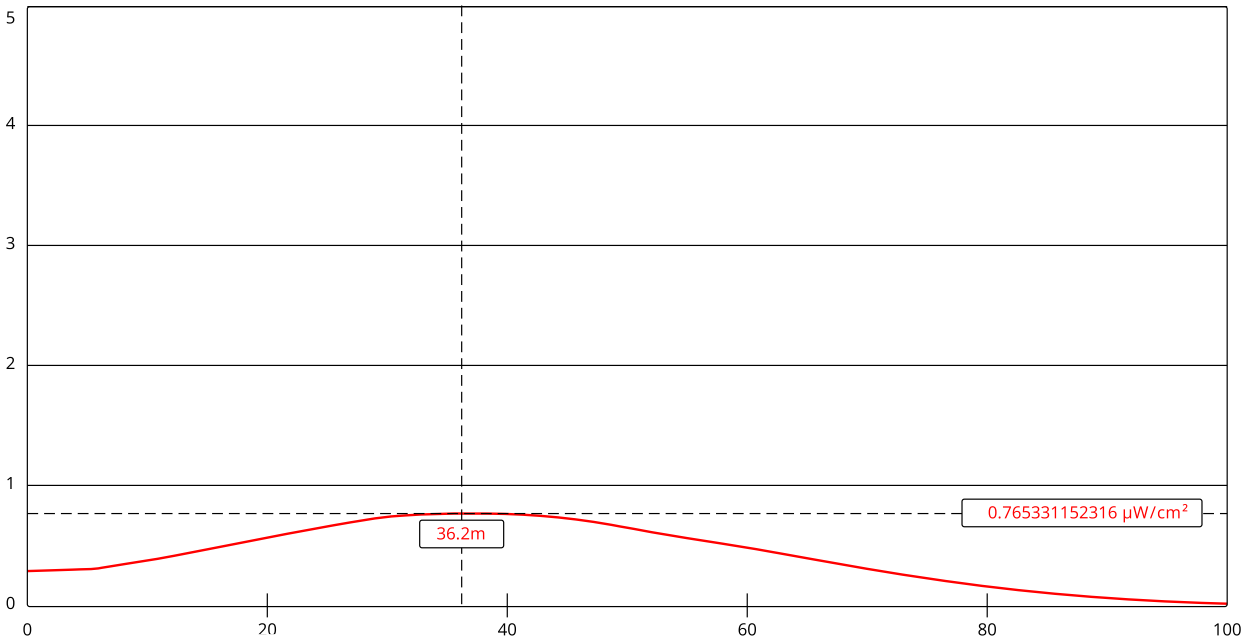
W222CZ, Newberry Broadcasting, Inc., 0000199830

Azi. AV EL HAAT ERP kW 60-F(50-50)

	Azi.	AV EL	HAAT	ERP kW	60-F(50-50)
000	194.8	81.5	0.2500	11.67	
030	186.9	89.4	0.2500	12.19	
060	199.3	77.0	0.2500	11.37	
090	204.9	71.4	0.2500	10.99	
120	216.7	59.6	0.2500	10.15	
150	209.1	67.2	0.2500	10.70	
180	221.1	55.2	0.2500	09.77	
210	216.8	59.5	0.2500	10.14	
240	206.8	69.5	0.2500	10.86	
270	201.3	75.0	0.2500	11.24	
300	210.5	65.8	0.2500	10.60	
330	202.3	74.0	0.2500	11.17	

Ave El= 205.87 M HAAT= 70.43 M AMSL= 276.3

# FM Model



Channel Selection	Channel 222 (92.3 MHz) ▾		
Antenna Type	EPA Type 2: Opposed V Dipole ▾		
Height (m)	66	Distance (m)	100
ERP-H (W)	250	ERP-V (W)	250
Num of Elements	2	$\lambda$	1
Num of Points	500		

Registration 1057739

Registration Detail

Reg Number	1057739	Status	Constructed
File Number	A0067849	Constructed	01/01/1954
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

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

Location (in NAD83 Coordinates)

Lat/Long	36-44-21.0 N 086-34-35.0 W	Address	OGLES AVE
City, State	FRANKLIN , KY		
Zip	42134	County	SIMPSON
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
210.3	69.5
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
279.8	69.5

Painting and Lighting Specifications

None

FAA Notification

FAA Study	98-ASO-5611-OE	FAA Issue Date	09/10/1998
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Owner & Contact Information

FRN	Owner Entity Type
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Owner

H G ACQUISITION INC	P: (502)586-4481
Attention To: HENRY STONE	F:
103 N HIGH ST	E:
FRANKLIN , KY 42134	

Contact

P:  
F:  
E:

Last Action Status

Status	Constructed	Received	10/28/1998
Purpose	New	Entered	10/29/1998
Mode	Mail In (Manual)		

Related Applications

10/28/1998	A0067849 - New (NE)
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