

**Technical Report
W233DL Minor Modification**

Mattoon Waiver Requested

This technical report is submitted for a minor modification to W233DL, FCC facility I.D. 156061. A site move with corresponding changes in the antenna, COR AGL and ERP are submitted for the translator to serve as a fill-in facility to rebroadcast WFKN(AM) 1220 kHz at Franklin, KY, FCC facility I.D. 24245. The application is filed with the permission of the assignee for WFKN (application 0000186214) and it is requested that program test be conditioned on the approval and consummation of that assignment application.

W233DL Modification Analysis:

An overlap study (exhibit E-1) shows the W233DL modification has no outgoing interference overlaps to other facilities.

§ 74.1233(a)(1) Mattoon waiver:

This application requests a *Mattoon Waiver* in accordance with the waiver granted for the move of W263AQ (DA-11-1495). The proposed W233DL facility is mutually exclusive with the licensed W233DL facility because the proposed 54 dBu (50-10) interfering contour overlaps the 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).

It is noted that W233DL has been licensed at its current location since September 26, 2014. Furthermore the only minor modifications to an IF channel, ERP and antenna

height have been at site and are consistent with many previous modifications prior to a *Mattoon* move.

It is also noted that the current licensee of WFKN failed to take advantage of the three translator windows. The *Mattoon* move requested herein will rebroadcast the only local service licensed to Franklin, KY (8,909) and Simpson County (18,319).

Antenna System:

The W233DL 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, nondirectional antenna will be mounted at a COR AGL of 65.0 meters, 275.3 meters AMSL, 72.0 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 $0.79 \mu\text{W}/\text{cm}^2$ at a distance of 35.6 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 W233DL modification complies with all Commission rules and policies.



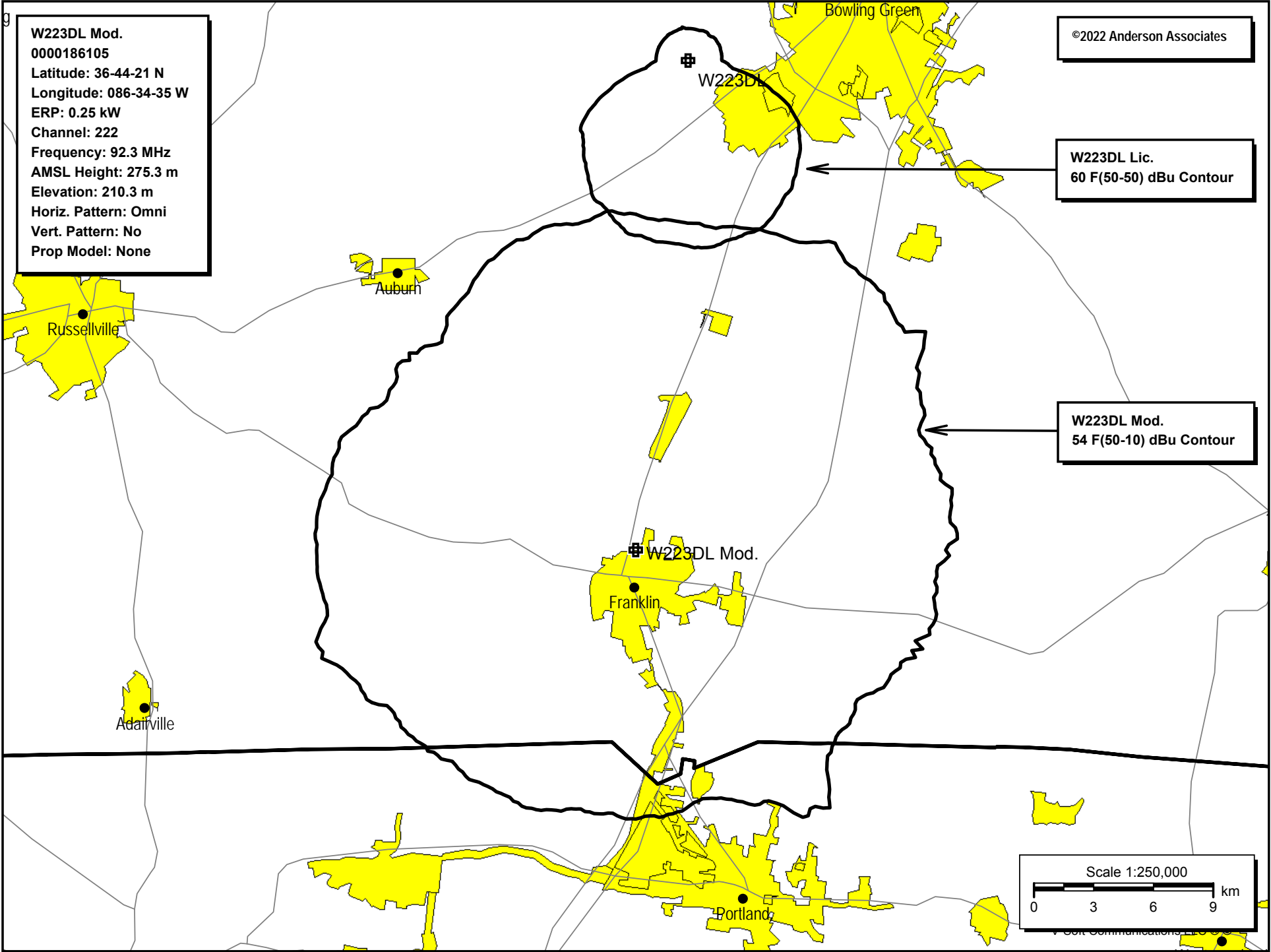
Christopher Anderson April 01, 2022
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E-1 W223DL Mod. 222D Overlap Study

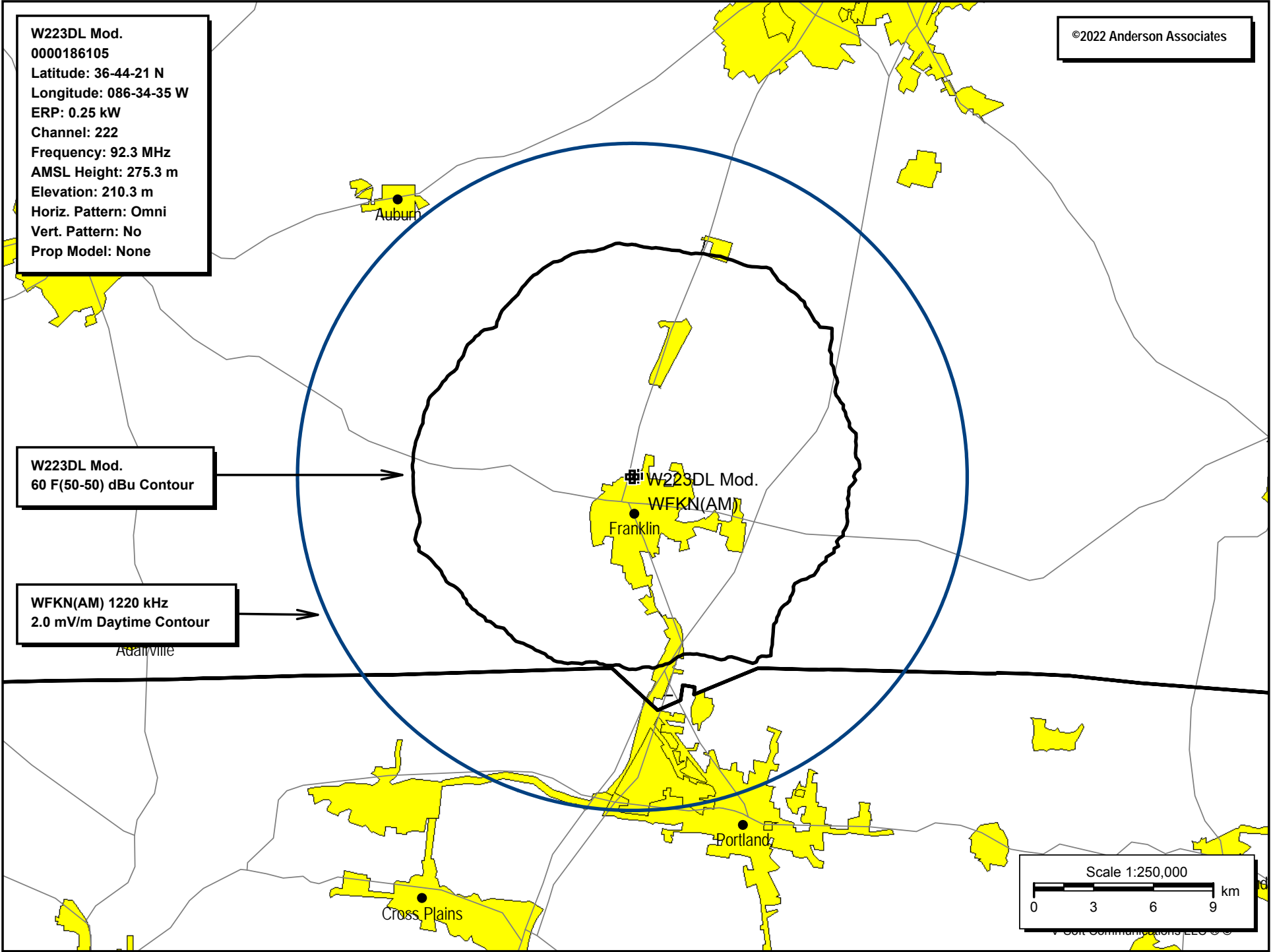
REFERENCE		CH#	222D	- 92.3 MHz, Pwr= 0.25 kW, HAAT= 72.0 M, COR= 275.3 M				DISPLAY DATES			
36 44 21.00 N.	Average Protected F(50-50)= 11.03 km							DATA 04-01-22			
86 34 35.00 W.	Omni-directional							SEARCH 04-01-22			
CH CITY	CALL	TYPE STATE	ANT AZI <--	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*	
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 Townsquare Media Of Evansv	-13.5*	14.9	
223D Bowling Green	W223DL	LIC DVN KY	6.1 186.1	24.67 0000186105	36 57 37.00 86 32 49.00	0.125 46	261	---Reference---			
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 Cumulus Li censing LLC	0.0	10.6	
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 Midwest Communi cations, In	56.3	1.1	
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 Columbus Club, Inc.		8.5	
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 Western Kentucky Universi t	16.7	8.8	
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 Educational Media Foundati	11.3	19.0	
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 Frank Keeton Aircasters, I	26.3	36.8	
222D Blumtown	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 Middle Tennessee State Uni	27.8	50.4	
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 Forever South Licenses, L	35.0	108.4	
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 Jackson Telecasters, Inc.	42.8	112.0	
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 Austin Peay State Universi	59.6	49.1	

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.
« = Station meets FCC minimum distance spacing for its class.
Reference station has protected zone issue: AM tower

E-2 W223DL Mod. 222D Mattoon Overlap Plot



E-3 W223DL Mod. 222D 60 F(50-50) dBu Contour Plot



Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **36° 44' 21"** North
Longitude **86° 34' 35"** West (NAD 83)

These coordinates convert to NAD 27 coordinates of
36° 44' 20.85", North, 86° 34' 35.02" West (NAD 27).

Height of antenna radiation center above mean sea level: **275.3** meters AMSL

Number of Evenly Spaced Radials = **12** 0° is referenced to True North

Results

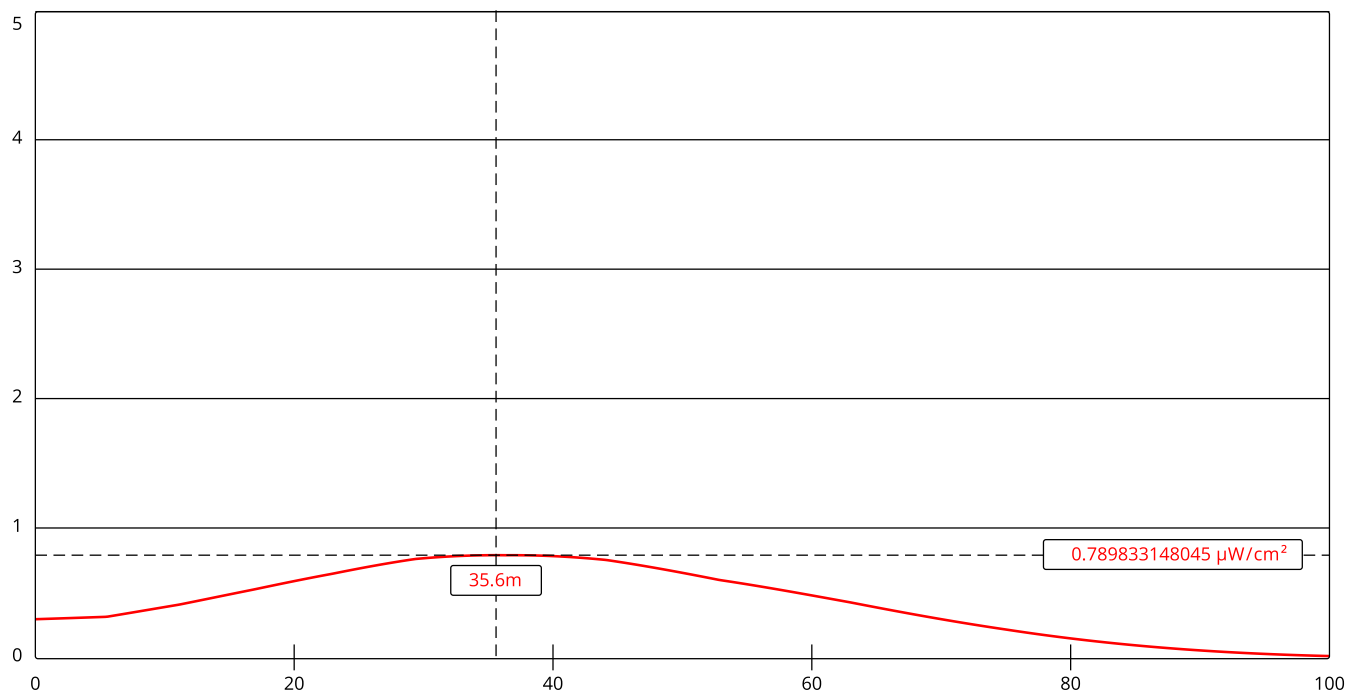
Calculated HAAT = **72 meters**

Antenna Height Above Average Terrain calculated
using FCC 30 second terrain database (continental USA only)

Individual "Radial HAAT" Values, in meters

0°	80.6 m
30°	90.4 m
60°	81.3 m
90°	76.7 m
120°	64.7 m
150°	71.0 m
180°	54.7 m
210°	58.5 m
240°	70.8 m
270°	73.9 m
300°	69.3 m
330°	73.5 m

E-5 W233DL Mod. RF Calculation



Channel Selection	Channel 222 (92.3 MHz) ▼		
Antenna Type +	EPA Type 2: Opposed V Dipole ▼		
Height (m)	<input type="text" value="65"/>	Distance (m)	<input type="text" value="100"/>
ERP-H (W)	<input type="text" value="250"/>	ERP-V (W)	<input type="text" value="250"/>
Num of Elements	<input type="text" value="2"/>	Element Spacing (?)	<input type="text" value="1"/>
Num of Points	<input type="text" value="500"/>		

ASR 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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