

Technical Report W279DT.CP Minor Modification

This technical report is submitted for a minor modification to W279DT.CP, FCC file no. BMPFT-20190328AAM. Changes in the antenna and COR AGL are submitted. The translator will continue to serve as a fill-in facility to rebroadcast WKDO(AM) 1560 kHz at Liberty, KY, FCC facility I.D. no. 8993.

W279DT.CP Modification Analysis:

An overlap study in exhibit E-1 shows the W279DT.CP modification does not produce any outgoing interference overlaps to any current facilities. The 60 dBu F(50-50) contour overlaps the current CP 60 dBu contour and is contained within the primary WKDO(AM) 2.0 mV/m daytime contour (exhibit E-2).

Antenna System:

The W279DT.CP modification is located on the existing 50 meter tower at coordinates:

37 18 21.8N 084 55 03.2W NAD 83.

A TOWAIR determination is included in exhibit E-3 and shows the tower does not require registration. A Nicom BKG77 two bay, 0.85 wavelength-spaced, nondirectional antenna is mounted at a COR AGL of 48.5 meters, 377.7 meters AMSL, 71 meters HAAT (exhibit E-4) and operate at 0.250 kW ERP.

RF Exposure Calculation:

The RF contribution was calculated using FM Model (exhibit E-5) . The resulting RF is $0.859 \mu\text{W}/\text{cm}^2$ at a distance of 21.6 meters from the base of the tower, which is

below 5% of the 200 $\mu\text{W}/\text{cm}^2$ maximum permissible for general public exposure allowing exclusion from consideration.

Conclusion:

It is concluded that the W279DT.CP modification complies with all Commission rules and policies.



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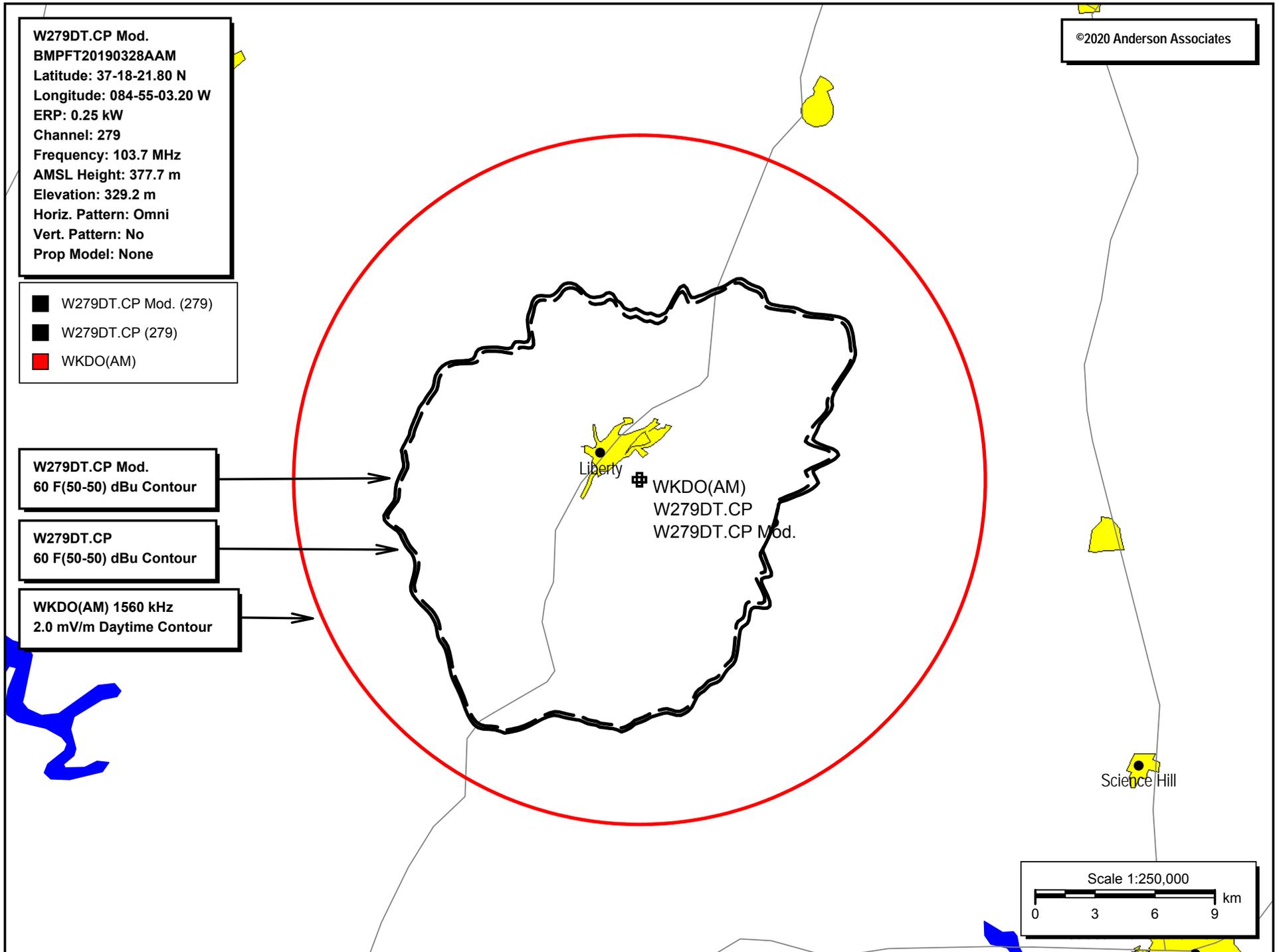
E-1 W279DT.CP Mod. Overlap Study

REFERENCE CH# 279D - 103.7 MHz, Pwr= 0.25 kW, HAAT= 70.5 M, COR= 377.7 M DISPLAY DATES
 37 18 21.80 N. Average Protected F(50-50)= 10.93 km DATA 06-09-20
 84 55 03.20 W. Omni-directional SEARCH 06-09-20

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*
279D Liberty	W279DT	LIC KY	---	0.0 212.5	0.00 BMPFT20190328AAM	37 18 22.30 84 55 02.80	0.250	381	---Reference---		
279C3 Cave City	WHHT	LIC KY	---	248.5 67.8	103.57 BLH19930308KC	36 57 34.10 86 00 07.90	13.500 137	103.7 346	37.1 Newberry Broadcasting, Inc	-12.5*	24.7
281C3 Campbellsville	WCKQ	LIC KY	Z_	274.7 94.5	40.64 BLH19950404KA	37 20 07.20 85 22 32.80	17.000 120	3.4 356	36.6 Tri-County Radio Broadcast	25.0	2.2
279A Frankfort	WFRT-FM	LIC KY	---	0.2 180.2	101.77 BLH19910422KA	38 13 17.30 84 54 51.80	2.500 109	71.6 336	22.3 Southern Belle, LLC	20.6	51.7
277D Somerset	W277AA	LIC KY	D_	127.6 307.8	34.24 BLFT19931123TF	37 07 03.30 84 36 41.80	0.250 89	1.1 388	10.5 Western Kentucky University	24.4	21.7
280A London	WWEL	LIC KY	---	103.6 284.1	76.44 BLH20090417AJL	37 08 30.30 84 04 44.80	5.400 106	43.4 466	28.5 F.T.G. Broadcasting, Inc.	24.0	37.4
280D Danville	W280FM	CP KY	D_	10.8 190.9	48.47 BNPFT20171207ABN	37 44 03.30 84 48 49.80	0.250	11.7 352	8.3 Hometown Broadcasting Of D	26.2	26.4
278D Berea	W278CC	LIC KY	D_	69.9 250.3	65.89 BLFT20161108AAK	37 30 28.30 84 12 57.70	0.250	25.8 527	17.4 Kentucky River Broadcastin	27.8	33.8
278C Knoxville	WIMZ-FM	LIC TN	---	140.4 321.1	168.07 BMLH19890601KB	36 08 06.30 83 43 28.60	100.000 525	129.7 875	86.9 Midwest Communications, In	28.2	69.2
278C3 Radcliff	WAKY-FM	LIC KY	N_	312.4 131.9	95.00 BLH20100311ABC	37 52 45.20 85 43 02.90	3.500 239	55.7 415	37.3 W & B Broadcasting Co., In	28.4	43.4
279A Campton	WCBJ	LIC KY	---	73.2 254.1	135.96 BLH19990621KE	37 39 03.30 83 26 20.60	4.100 121	89.2 430	31.5 Morgan County Industries,	34.7	72.3
280A Jamestown	WDEB-FM	LIC TN	---	181.3 1.3	97.94 BLH20101215AI0	36 25 31.20 84 56 31.80	3.400 135	45.9 565	30.5 Baz Broadcasting, Inc.	39.7	49.1
226A Monticello	WMKZ	LIC KY	---	173.4 353.5	55.62 BLH19991027ACI	36 48 29.30 84 50 45.80	1.450 206	63.7 522	36.6 Monticello-Wayne County Me	9.5R	46.1M
282C3 Williamsburg	WEZJ-FM	LIC KY	Z_	133.8 314.2	89.76 BLH20040212ADG	36 44 43.20 84 11 23.70	6.200 200	3.8 556	40.5 Whitley Broadcasting Co.,	76.4	48.0

Terrain database is GLOBE 30 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 restricted contour.
 « = Station meets FCC minimum distance spacing for its class.
 Reference station has protected zone issue: AM tower

E-2 W279DT.CP Mod. 60 F(50-50) dBu Contour Plot



TOWAIR Determination Results

*** NOTICE ***

TOWAIR's findings are not definitive or binding, and we cannot guarantee that the data in TOWAIR are fully current and accurate. In some instances, TOWAIR may yield results that differ from application of the criteria set out in 47 C.F.R. Section 17.7 and 14 C.F.R. Section 77.13. A positive finding by TOWAIR recommending notification should be given considerable weight. On the other hand, a finding by TOWAIR recommending either for or against notification is not conclusive. It is the responsibility of each ASR participant to exercise due diligence to determine if it must coordinate its structure with the FAA. TOWAIR is only one tool designed to assist ASR participants in exercising this due diligence, and further investigation may be necessary to determine if FAA coordination is appropriate.

DETERMINATION Results

Structure does not require registration. There are no airports within 8 kilometers (5 miles) of the coordinates you provided.

Your Specifications

NAD83 Coordinates

Latitude	37-18-21.8 north
Longitude	084-55-03.2 west

Measurements (Meters)

Overall Structure Height (AGL)	50
Support Structure Height (AGL)	0
Site Elevation (AMSL)	329.2

Structure Type

GTOWER - Guyed Structure Used for Communication Purposes

E-4 W279DT.CP Mod. HAAT Calculation

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **37° 18' 21.8"** North

Longitude **84° 55' 3.2"** West (NAD 83)

Height of antenna radiation center above mean sea level: **377.7** meters AMSL

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

Results

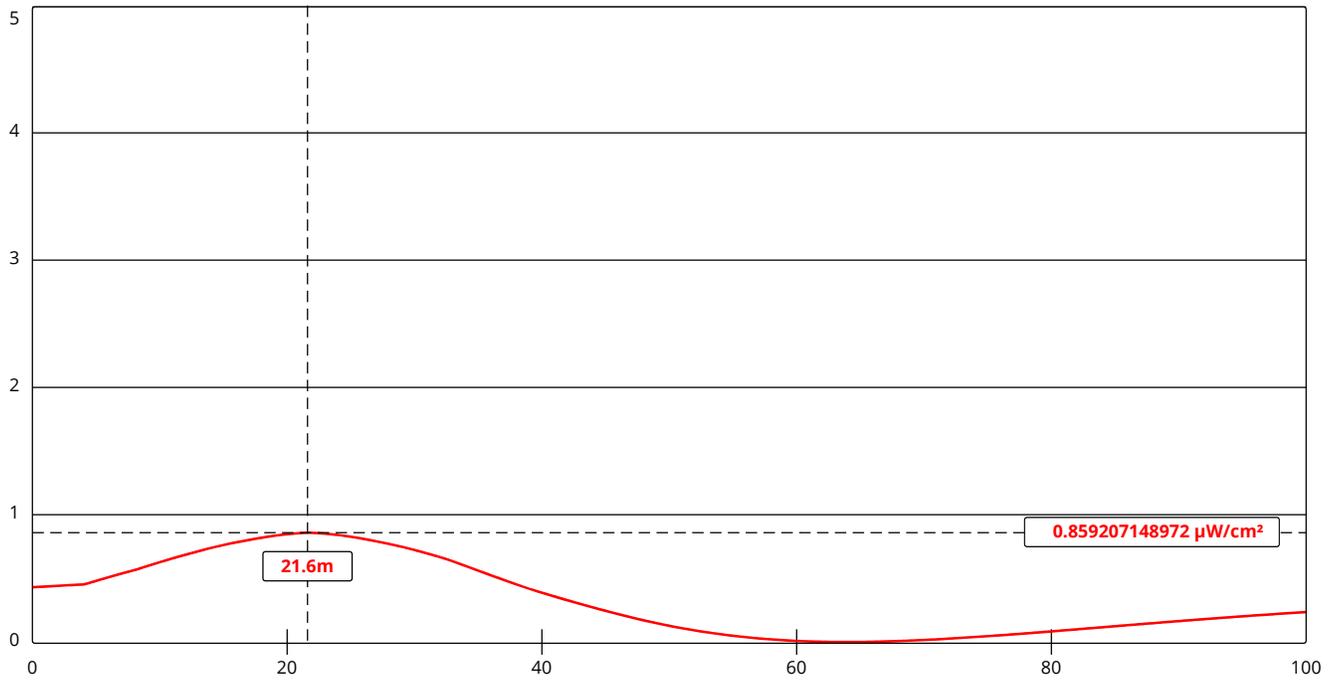
Calculated HAAT = **71 meters**

Antenna Height Above Average Terrain calculated
using 1 km [GLOBE terrain data](#)

Individual "Radial HAAT" Values, in meters

0°	39.8 m
30°	73.0 m
60°	90.8 m
90°	44.1 m
120°	27.5 m
150°	53.0 m
180°	85.5 m
210°	123.4 m
240°	92.5 m
270°	84.9 m
300°	73.8 m
330°	60.6 m

E-5 W279DT.CP Mod. RF Calculation



Channel Selection	Channel 279 (103.7 MHz)		
Antenna Type +	EPA Type 2: Opposed V Dipole		
Height (m)	48.5	Distance (m)	100
ERP-H (W)	250	ERP-V (W)	250
Num of Elements	2	Element Spacing (λ)	0.85
Num of Points	500		