Technical Report
W259CX.CP Minor Modification

This technical report is submitted for a minor modification to W259CX.CP, FCC file no. BNPFT-20171201AAG. A move to the third-adjacent channel 256 with corresponding changes in tower site, antenna and ERP are submitted. The facility will continue to serve as a fill-in facility for WMST(AM) 1150 kHz at Mt. Sterling, KY, facility I.D. 46745.

W259CX.CP Modification Analysis:

An overlap study in exhibit E-1 shows the W259CX.CP modification to channel 256 has no interference overlaps to other existing facilities.

The 60 dBu F(50-50) contour overlaps the current 60 dBu contour and is contained within the primary WMST(AM) 2.0 mV/m daytime contour (exhibit E-2). The 60 F(50-50) dBu contour has less than 50% overlap to W295BD, which also serves as a fill-in facility for WMST(AM) (exhibit E-3).

Antenna System:

The W259CX.CP modification will be located at an existing tower at coordinates:

38 03 22.2N 83 56 33.1W NAD 83.

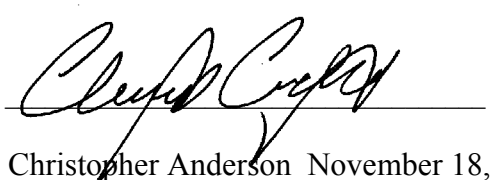
A TOWAIR determination (exhibit E-4) shows the tower does not require registration. A Nicom BKG88 single bay, non-directional antenna will be mounted at a COR AGL of 19.8 meters, 317 meters AMSL, 31 meters HAAT (exhibit E-5) and will operate at 0.005 kW ERP.

RF Exposure Calculation:

The RF contribution was calculated using FM Model (exhibit E-6). The RF is calculated to be 0.635 μW/cm^2 at a distance of 4.8 meters from the base of the tower, which is below 5% of the 200 μW/cm^2 maximum permissible for general public exposure allowing exclusion from consideration.

Conclusion:

It is concluded that the W259CX.CP modification complies with all Commission rules and policies.



Christopher Anderson November 18, 2020
andersce@bham.rr.com

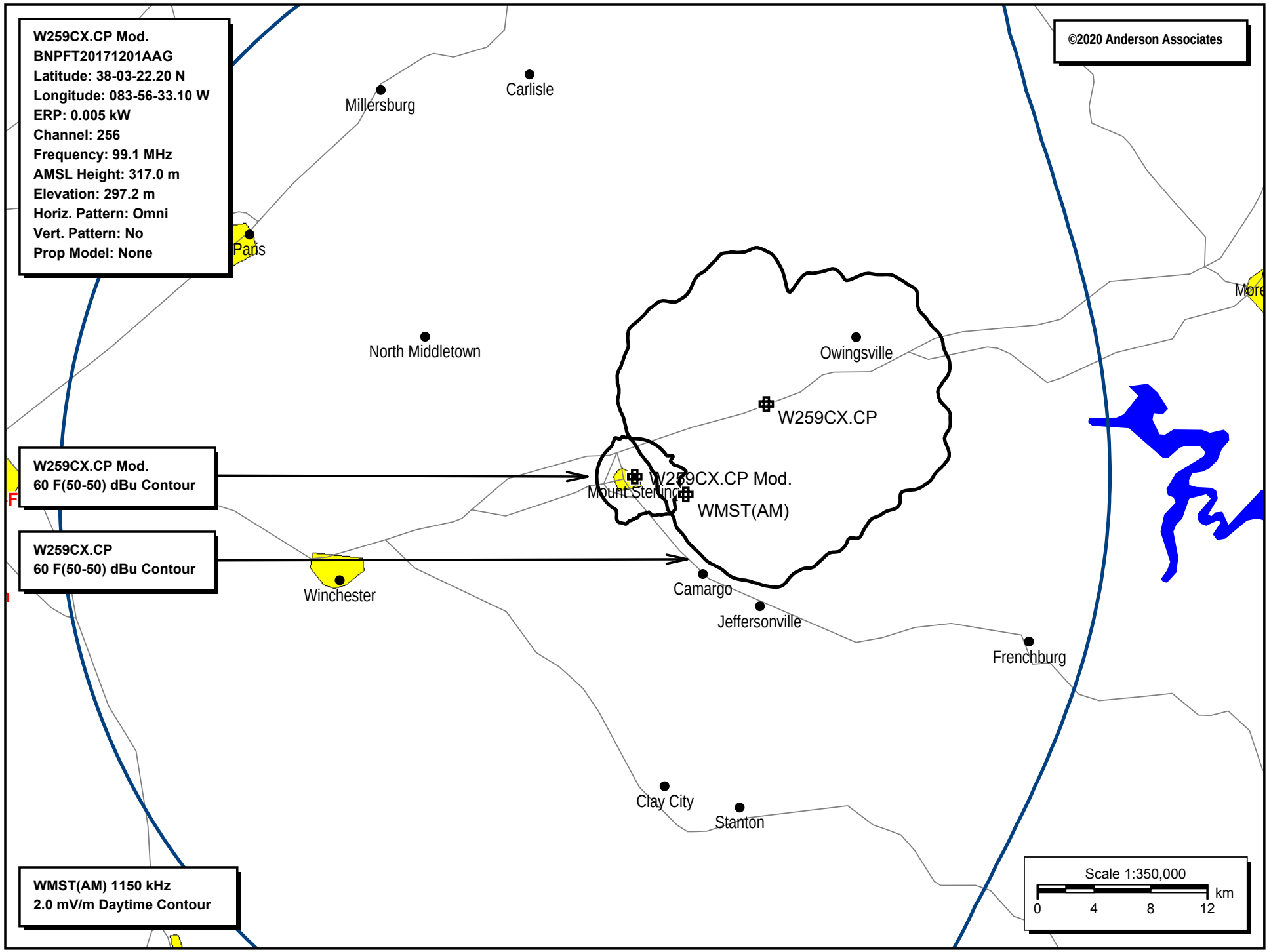
E-1 W259CX.CP Mod. 256D Overlap Study

REFERENCE CH# 256D - 99.1 MHz, Pwr= 0.005 kW, HAAT= 31.0 M, COR= 317 M DISPLAY DATES
38 03 22.20 N. Average Protected F(50-50)= 2.72 km DATA 11-18-20
83 56 33.10 W. Omni-directional SEARCH 11-18-20

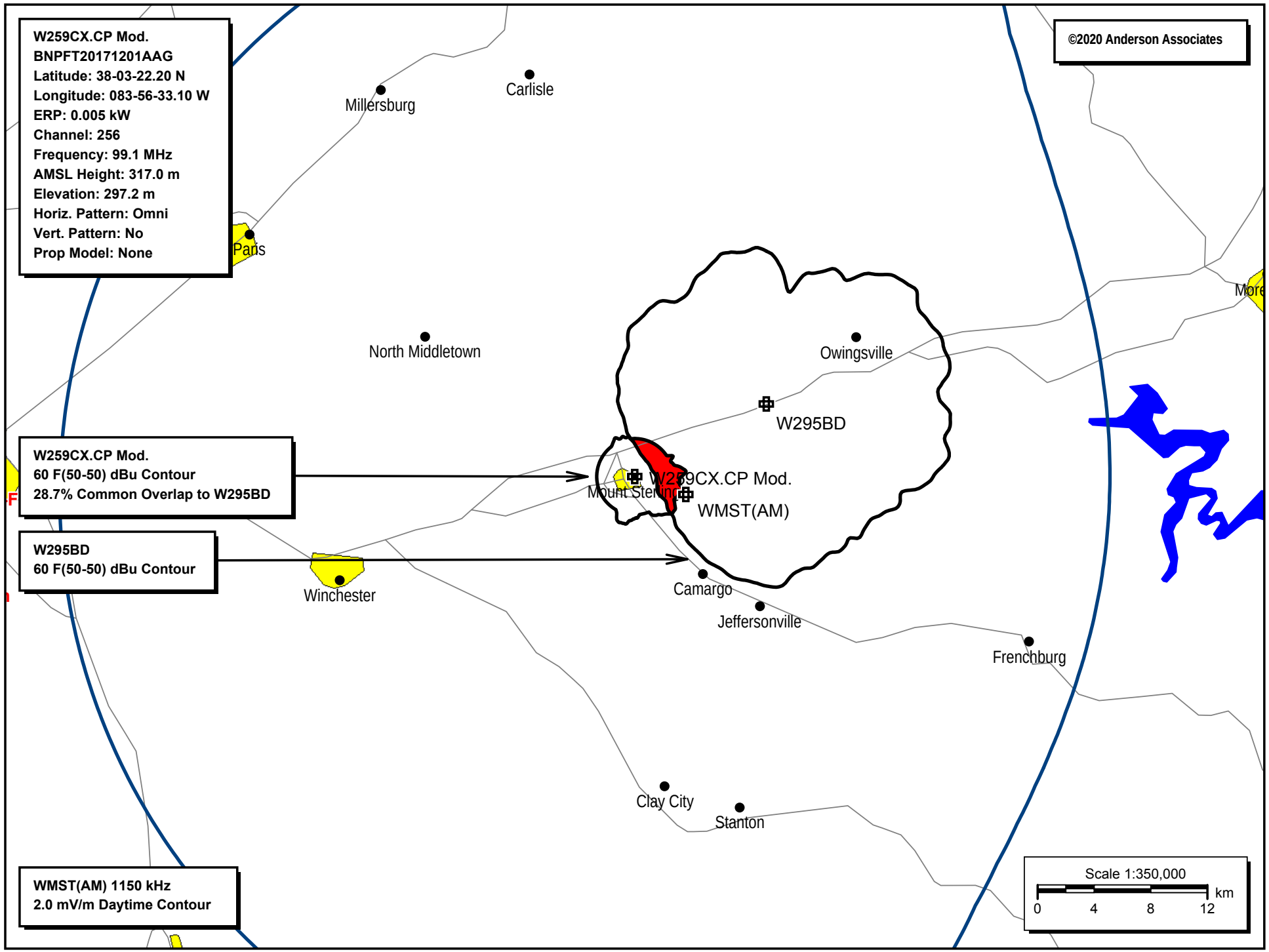
CH CITY	CALL STATE	TYPE	ANT <--	AZI	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
256A Keene	WJMM-FM KY	LIC CN	_ N	271.4 91.1	47.66 BLH20100927ADS	38 03 56.30 84 29 12.80	2.100 170	81.2 460	27.9 Christian Broadcasting Sys	-36.2*	11.1
259D Mt. Sterling	W259CX KY	CP CN	_ N	61.0 241.1	10.61 BNPFT20171201AAG	38 06 08.20 83 50 11.70	0.250	354	---Reference--- Gateway Radio Works, Inc.		
255C1 Paintsville	WSIP-FM KY	LIC NCN	_ N	102.0 282.7	103.00 BLH20110725AFB	37 51 30.30 82 47 40.60	100.000 191	92.4 454	62.2 S.I.P. Broadcasting Compan	7.0	36.0
257D Irvine	W257DP KY	LIC CN	_ N	181.5 1.5	43.49 BLFT20160830ABS	37 39 54.30 83 57 20.70	0.250	24.3 446	16.1 Kentucky River Broadcastin	15.8	20.7
254D Stanton	W254DH KY	CP CN	_ N	164.6 344.7	19.98 BNPFT20171205AAK	37 52 58.30 83 52 55.70	0.022	0.3 259	3.8 Kentucky Mountain Bible Co	16.5	16.0
258C3 Ripley	WAOL OH	LIC CN	_ N	354.8 174.8	66.15 BLH20021101ABS	38 38 55.30 84 00 41.70	13.000 140	3.9 390	38.9 Dreamcatcher Communication	59.3	26.3
256B Dayton	WHKO OH	LIC CN	_ N	352.0 171.8	188.39 BMLH20010810AAV	39 44 02.20 84 14 52.80	50.000 325	158.0 588	81.3 Camelot Radio Buyer, LLC	27.4	94.3
253D Winchester	W253BK KY	LIC DVN	_ N	267.1 86.8	44.53 BLFT20141031AAB	38 02 06.30 84 27 01.80	0.250	0.6 439	11.5 Radio By Grace, Inc.	41.2	32.9
255D Berea	W255CX KY	LIC CN	_ N	211.6 31.4	60.34 BLFT20161014ABN	37 35 36.40 84 18 06.30	0.038	8.5 348	5.9 Jared A. Nix	48.6	50.7

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.

E-2 W259CX.CP Mod. 256D 60 F(50-50) dBu Plot



E-3 W259CX.CP Mod. Common Overlap Plot to W295BD



TOWAIR Determination Results

A routine check of the coordinates, heights, and structure type you provided indicates that this structure does not require registration.

*** 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

PASS SLOPE(100:1)NO FAA REQ - 3031.0 Meters (9944.11 Feet)away & below slope by 10.0 Meters (32.8100 Feet)

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	38-03-51.00N	083-58-32.00W	MOUNT STERLING-MONTGOMERY COUNTY	MONTGOMERY MOUNT STERLING, KY	299.8	1524.0

Your Specifications

NAD83 Coordinates

Latitude	38-03-22.2 north
Longitude	083-56-33.1 west

Measurements (Meters)

Overall Structure Height (AGL)	22.8
Support Structure Height (AGL)	0
Site Elevation (AMSL)	297.2

Structure Type

BTWR - Building with Tower

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **38° 3' 22.2"** North
Longitude **83° 56' 33.1"** West (NAD 83)

Height of antenna radiation center above mean sea level: **317** meters AMSL

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

Results

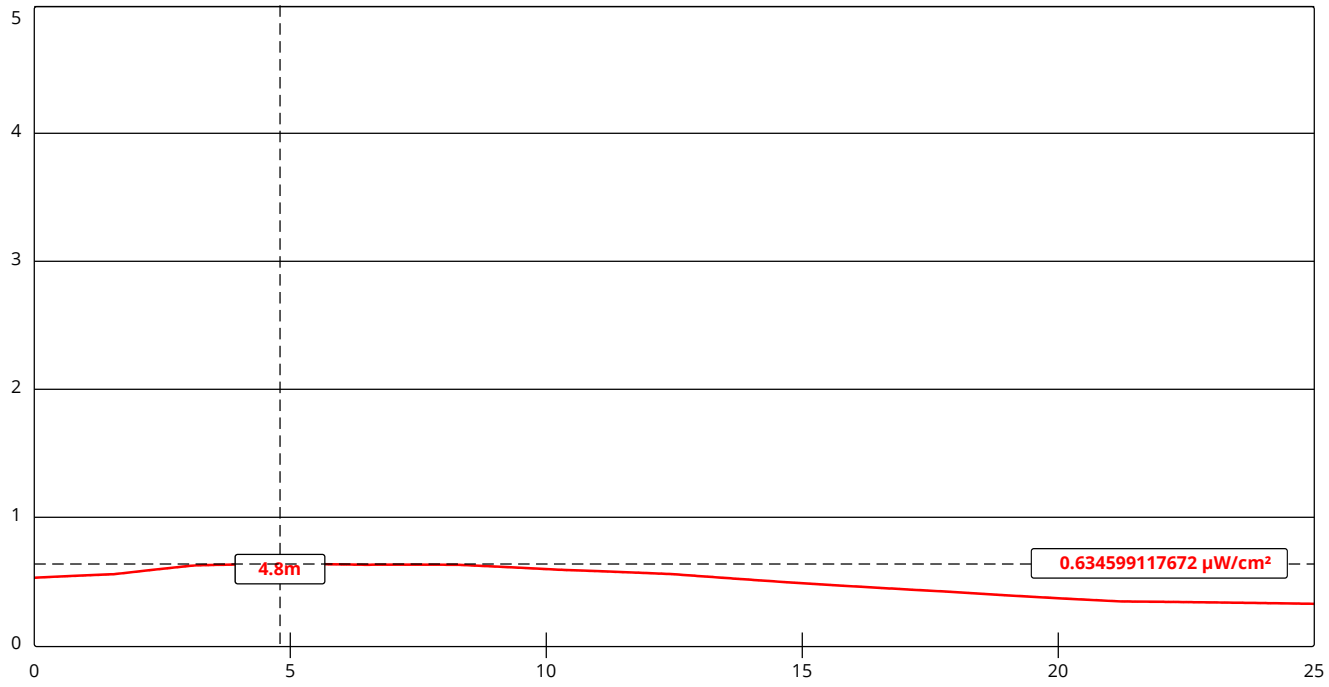
Calculated HAAT = **31 meters**

Antenna Height Above Average Terrain calculated
using 1 km GLOBE terrain data

Individual "Radial HAAT" Values, in meters

0°	26.0 m
30°	25.5 m
60°	37.1 m
90°	45.2 m
120°	43.1 m
150°	41.1 m
180°	36.3 m
210°	27.7 m
240°	6.2 m
270°	20.9 m
300°	23.5 m
330°	36.2 m

E-6 W259CX.CP Mod. RF Calculation



Channel Selection	Channel 259 (99.7 MHz)		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other"		
Height (m)	19.8	Distance (m)	25
ERP-H (W)	5	ERP-V (W)	5
Num of Elements	1	Element Spacing (λ)	1
Num of Points	500		