Technical Report
WWGO(FM) 221A HD1 Auxiliary Application

This technical report is submitted for an auxiliary application for WWGO(FM) 221A HD1 at Charleston, IL, FCC facility I.D. 72317.

WWGO(FM) HD1 Auxiliary Analysis:

The WWGO(FM) HD1 auxiliary facility will be co-located on the existing WWGO(FM) tower, ASR 1057129, at coordinates:

39 31 40N 88 21 23W NAD 27.

A PSI FML three bay, full wavelength-spaced, nondirectional antenna will be mounted separately from the primary WWGO(FM) antenna at a COR AGL of 85 meters, 297 meters AMSL and will operate at 60 Watts ERP. The auxiliary HD1 facility 60 dBu contour is contained within the primary WWGO(FM) 60 dBu contour (exhibit E-1). The FCC 30 second terrain HAAT is 91 meters (exhibit E-2), which is greater than 70% of the primary WWGO(FM) HAAT of 100 meters.

RF Exposure Calculation:

The RF contribution was calculated using FMModel (exhibit E-3), and is calculated to be 0.09 $\mu W/cm^2$ at a distance of 38.5 meters from the base of the tower, which is well below 5% of the 200 $\mu W/cm^2$ maximum permissible for general public exposure allowing exclusion from consideration.

Conclusion:

It is concluded that the WWGO(FM) HD1 auxiliary application complies with all Commission rules and policies.

Christopher Anderson February 18, 2019
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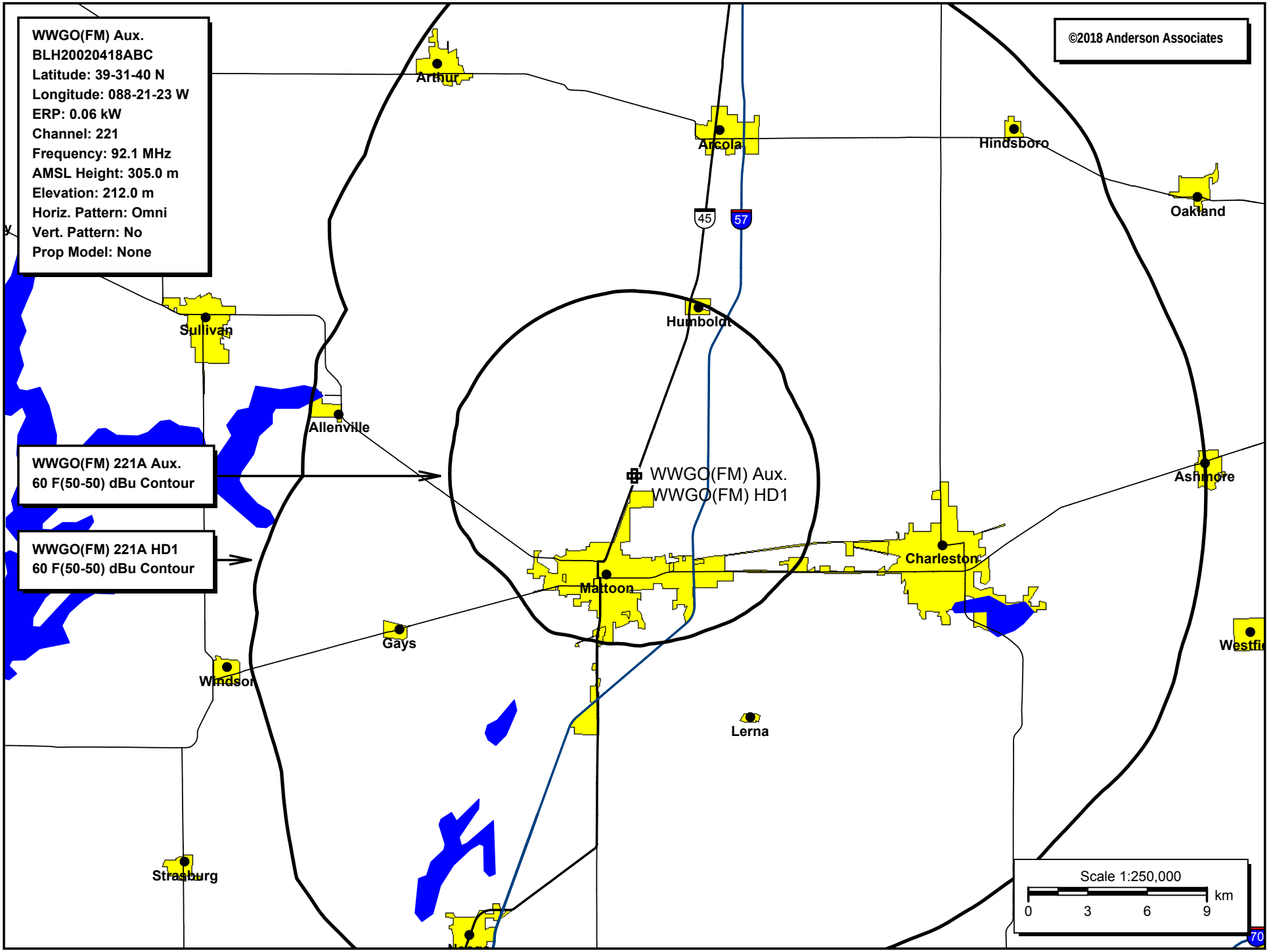
E-1 WWGO(FM) 221A HD1 Auxiliary 60 dBu Contour Plot



Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **39° 31' 40"** North
Longitude **88° 21' 23"** West (NAD 27)

These coordinates convert to NAD 83 coordinates of
39° 31' 40.12", North, 88° 21' 23.17" West (NAD 83).

Height of antenna radiation center above mean sea level: **297** meters AMSL

Number of Evenly Spaced Radials = **8** 0° is referenced to True North

Results

Calculated HAAT = **91 meters**

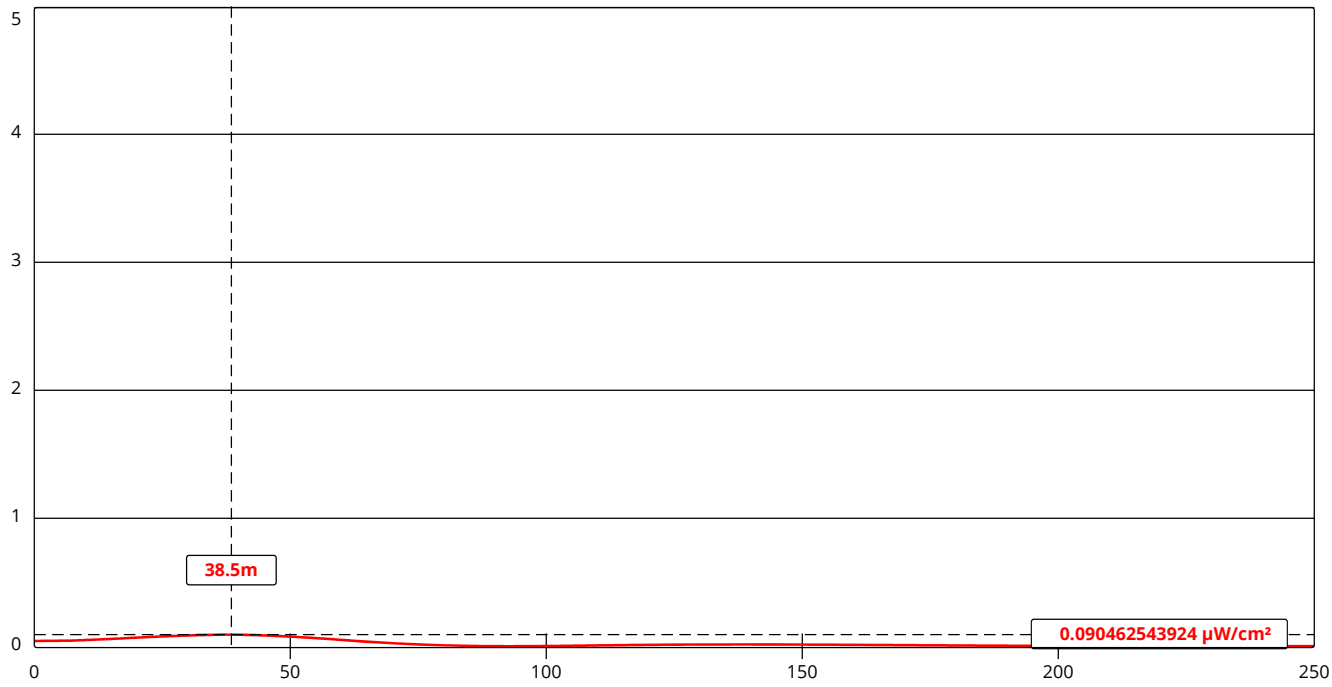
Antenna Height Above Average Terrain calculated
using FCC 30 second terrain database (continental USA only)

Individual "Radial HAAT" Values, in meters

0°	97.0 m
45°	93.2 m
90°	95.5 m
135°	89.8 m
180°	80.6 m
225°	76.6 m
270°	96.5 m
315°	97.0 m

E-3 WWGO(FM) Auxiliary RF Calculation

FM Model



Channel Selection	Channel 221 (92.1 MHz)		
Antenna Type +	EPA Type 2: Opposed V Dipole		
Height (m)	85	Distance (m)	250
ERP-H (W)	60	ERP-V (W)	60
Num of Elements	3	Element Spacing (λ)	1
Num of Points	500		

ASR Registration 1057129

Registration Detail

Reg Number	1057129	Status	Constructed
File Number	A1069010	Constructed	11/01/1993
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

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

Location (in NAD83 Coordinates)

Lat/Long	39-31-40.0 N 088-21-23.0 W	Address	2.42 MILES N.E.
City, State	MATTOON , IL		
Zip	61938	County	COLES
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
212.0	98.0
Overall Height Above Mean Sea Level	**Overall Height Above Ground w/o Appurtenances**
310.0	97.0

Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 9
Paint and Light in Accordance with FAA Circular Number 70/7460-1G

FAA Notification

FAA Study	98-AGL-3510-OE	FAA Issue Date	08/28/1998

Owner & Contact Information

FRN	0002844348	Owner Entity Type	Corporation

Owner

THE CROMWELL GROUP, INC. OF ILLINOIS
Attention To: Bayard H. Walters
1824 Murfreesboro Road
P.O. Box 150846
Nashville , TN 37215

P: (615)361-7560
F: (615)366-4313
E: budbayard@aol.com

Contact

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Last Action Status