

WOVO(FM).AP Minor Modification

This technical report is submitted in support of an amendment to the pending application to WOVO(FM) 292C2 at Horse Cave, KY, FCC facility I.D. 48702. Changes in tower site, COR and ERP are submitted. The following exhibits are provided for the form 301 minor modification:

- E-1 WOVO(FM) 292C2 Mod. Spacing Study
- E-2 HAAT Calculation
- E-3 70 dBu Longley-Rice Contour Coverage of Horse Cave, KY
- E-4 70 dBu Longley-Rice Contour Tabulation
- E-5 RF Calculation
- E-6 ASR 1213318

WOVO(FM) Modification Analysis:

A spacing study in exhibit E-1 shows the WOVO(FM) modification is fully-spaced at the new tower site, ASR 1213318, at coordinates:

37 02 39.4N 086 10 59.9W NAD83.

A PSI FHR-8C-8WS eight bay, 0.8 wavelength-spaced non-directional antenna will be mounted at a COR AGL of 94.0 meters, 306.8 meters AMSL, 113.1 meters HAAT (exhibit E-2) and will operate at 50 kW ERP.

Longley-Rice prediction is utilized to establish 70 dBu coverage of Horse Cave, KY:

Exhibit E-3 demonstrates the WOVO(FM) facility will place a 70 dBu contour over one hundred percent (100) of the Horse Cave, KY, boundary using the Longley-Rice “mean occurrence” contour calculated using the V-Soft Probe 5 software and the FCC 30 meter terrain database. Probe 5 is based on the NTIA Longley-Rice algorithm, and its use has been regularly accepted by the Commission in allocation proceedings in the past.

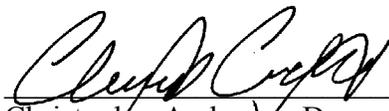
Use of Longley-Rice is permitted based on Commission policy and the *Hardinsburg, KY* ruling, 25 FCC Rcd 13204 (2010), which allows its use when the Longley-Rice predicted 70 dBu exceeds the FCC predicted 70 dBu by at least 10% on a radial through the community of license. Exhibit E-4 includes a tabulation of the FCC and Longley-Rice 70 dBu contours through the range of azimuths of 50 to 52 and 56 to 64 degrees true that encompass the entire Horse Cave, KY boundary. The Longley-Rice 70 dBu exceeds the FCC 70 dBu by more than 10% at all azimuths including the azimuth directly through the community.

RF Exposure Calculation:

The RF contribution of the WOVO(FM) modification was calculated using the FMModel program (exhibit E-5). The resulting value is $1.53 \mu\text{W}/\text{cm}^2$ at a distance of 55 meters from the base of the tower, which is less than the $200 \mu\text{W}/\text{cm}^2$ maximum permissible for general public, uncontrolled exposure.

Conclusion:

It is submitted the minor modification application for WOVO(FM) is in full compliance with the Commission rules and policies.



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E-1 WOVO(FM) 292C2.AP Mod. Spacing Study

REFERENCE
 37 02 39.40 N.
 86 10 59.90 W.

CLASS = C2
 Current Spacings to 3rd Adj.

DISPLAY DATES
 DATA 12-26-23
 SEARCH 12-26-23

----- Channel 292 - 106.3 MHz -----

Call	Channel	Location		Azi	Dist	FCC	Margin
WOVO	LIC 292C2	Horse Cave	KY	180.0	0.00	189.5	-189.5
WOVO	APP 292C2	Horse Cave	KY	67.7	19.65	189.5	-169.9
WGRK-FM	LIC-Z 289A	Greensburg	KY	67.8	63.92	54.5	9.4
WKDZ-FM	LIC-N 293C3	Cadiz	KY	258.9	132.04	116.5	15.5
WCDA	LIC 292A	Versailles	KY	52.6	185.88	165.5	20.4
WNRQ	LIC 290C	Nashville	TN	208.1	126.80	104.5	22.3
WGRK-FM	CP -N 289A	Greensburg	KY	65.4	78.63	54.5	24.1
WWBL	LIC 293B	Washington	IN	334.5	198.18	168.5	29.7
WYKY	LIC 291A	Science Hill	KY	85.7	146.50	105.5	41.0
WQRL	LIC 292B1	Benton	IL	294.9	241.83	199.5	42.3
WDKS	LIC 291A	Newburgh	IN	308.3	151.94	105.5	46.4
WSKZ	LIC 293C0	Chattanooga	TN	159.4	222.90	175.5	47.4
WCJZ	LIC 289A	Cannelton	IN	325.1	102.12	54.5	47.6

 All separation margins include rounding

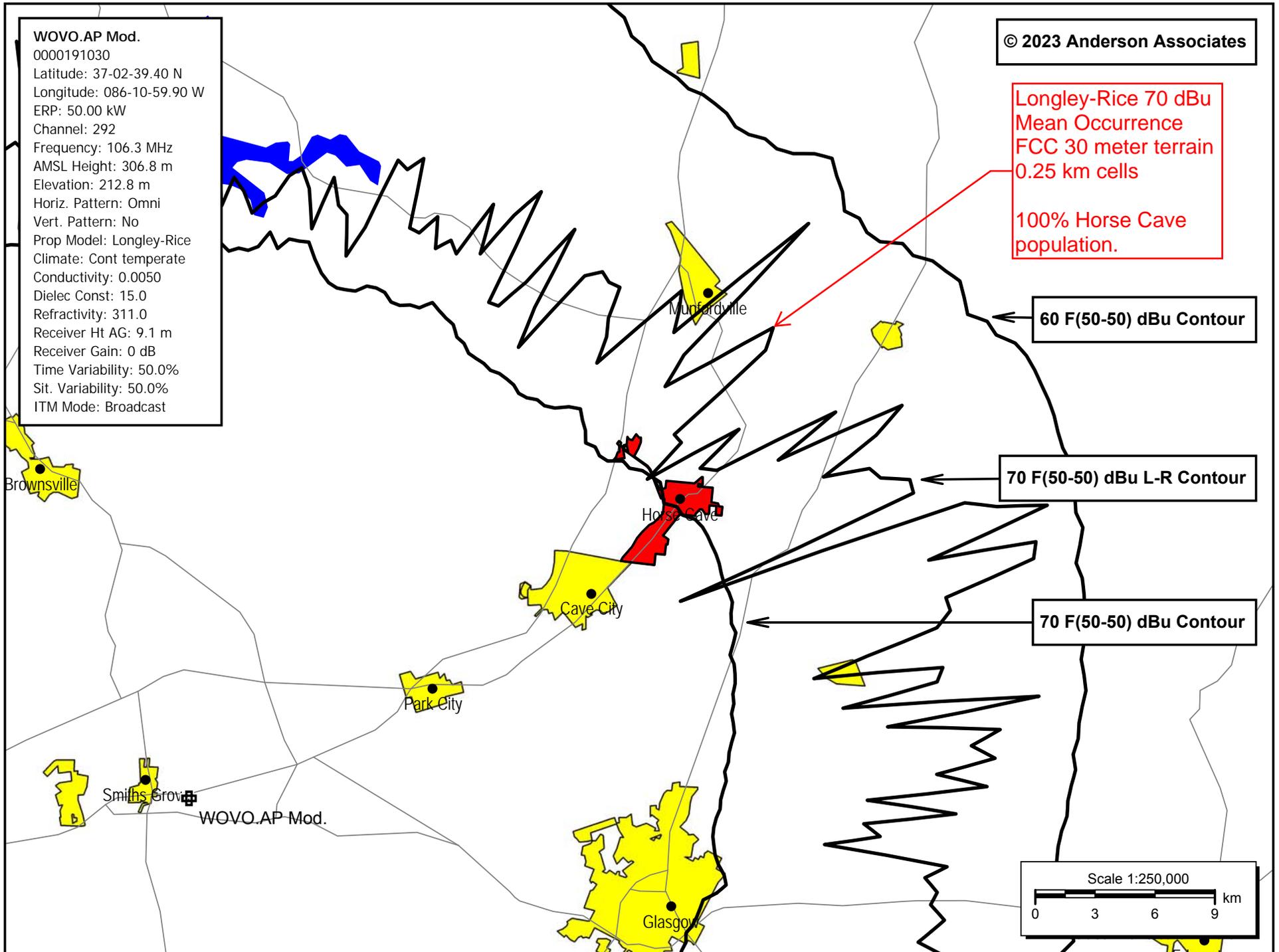
E-2 WOVO(FM) 292C2.AP Mod. HAAT

N. Lat. = 370239.4 W. Lng. = 861059.9
HAAT and Distance to Contour,
FCC, FM 2-10 Mi, 51 pts Method - FCC 30 Meter

Azi.	AV EL	HAAT	ERP kW	60-F(50-50)
000	204.0	102.8	50.0000	45.24
045	203.1	103.7	50.0000	45.40
090	211.1	95.7	50.0000	44.00
135	215.7	91.1	50.0000	43.13
180	185.1	121.7	50.0000	48.23
225	170.0	136.8	50.0000	50.38
270	173.9	132.9	50.0000	49.83
315	186.6	120.2	50.0000	48.01

Ave El= 193.67 M HAAT= 113.13 M AMSL= 306.8

E-3 WOVO(FM) 292C2.AP Mod. Contours Plot



E-4 WOVO(FM) 292C2 Distance to Contour Calculation Table

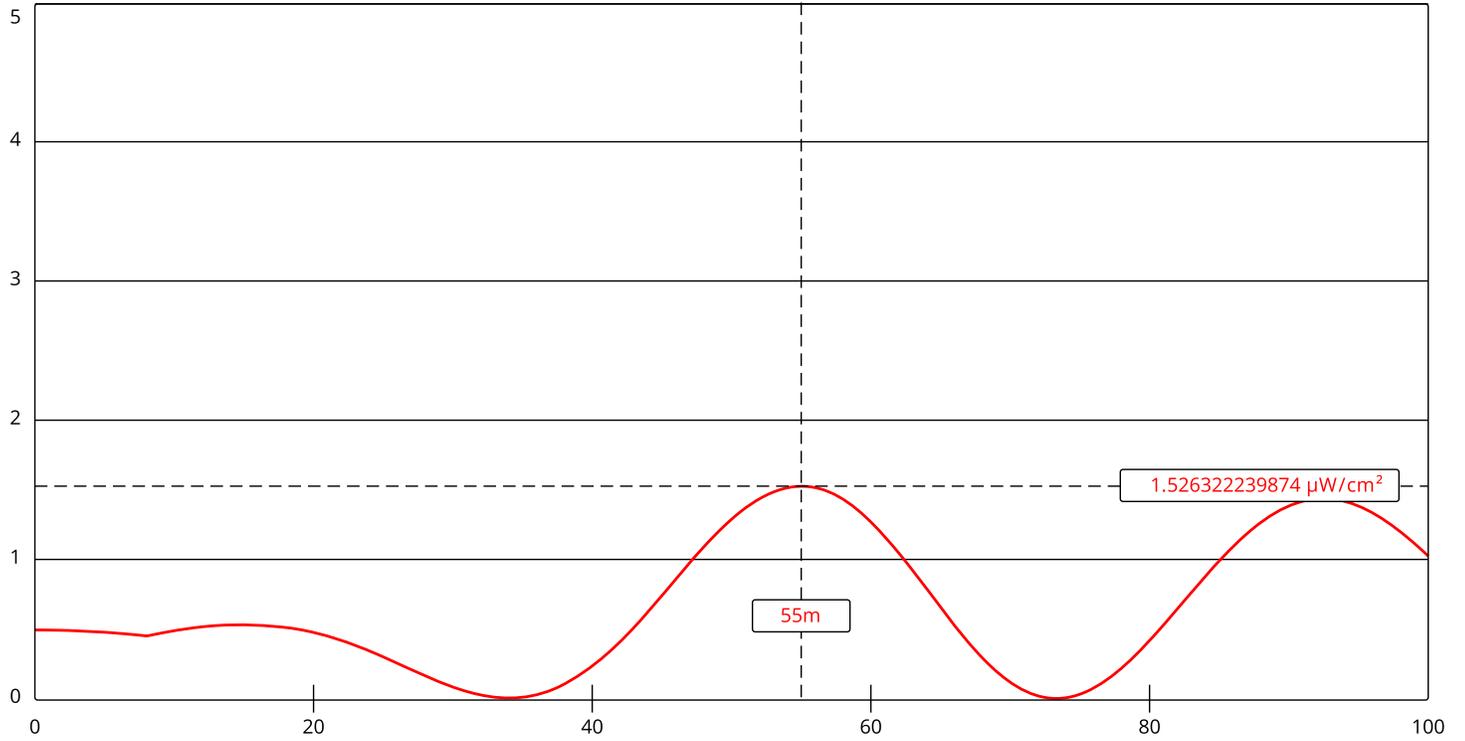
Azimuth*	60 dBu⁽¹⁾ km	70 dBu⁽¹⁾ km	70 dBu L-R⁽²⁾ km	% > 70 dBu
50	44.2	26.8	34.2	27.6
52	45.2	27.5	36.6	33.1
56	46.5	28.4	33.2	16.9
58	45.9	28.0	31.1	11.1
60	46.6	28.5	34.0	19.3
62	47.4	29.1	38.9	33.7
64	47.4	29.1	37.9	30.2

(1) Contours calculated with V-Soft Contour program using FCC Curves and FCC 30 meter terrain database.

(2) Longley-Rice mean occurrence 70 dBu contour calculated using Probe 5 and the FCC 30 meter terrain data and 0.25 km cells.

* The 50 to 52 and 56 to 64 degree azimuths encompass the Horse Cave, KY 2020 U.S. Census boundary.

FM Model



Channel Selection	Channel 292 (106.3 MHz) ▾		
Antenna Type +	EPA Type 3: Opposed U Dipole ▾		
Height (m)	94	Distance (m)	100
ERP-H (W)	50000	ERP-V (W)	50000
Num of Elements	8	λ	0.8
Num of Points	500		

Registration 1213318**Registration Detail**

Reg Number	1213318	Status	Constructed
File Number	A1218647	Constructed	05/23/2000
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

Structure Type GTOWER - Guyed Structure Used for Communication Purposes

Location (in NAD83 Coordinates)

Lat/Long	37-02-39.4 N 086-10-59.9 W	Address	470 Hayes Road
City, State	Smiths Grove , KY		
Zip	42171	County	WARREN
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	212.8	Overall Height Above Ground (AGL)	106.4
Overall Height Above Mean Sea Level	319.2	Overall Height Above Ground w/o Appurtenances	106.0

Painting and Lighting Specifications

FAA Chapters 4, 6, 13

Paint and Light in Accordance with FAA Circular Number 70/7460-1J

FAA Notification

FAA Study	99-ASO-4902-OE	FAA Issue Date	09/27/1999
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Owner & Contact Information

FRN	0006154793	Owner Entity Type	Limited Liability Company
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Owner

WKLX INC
102 Pecan Avenue
Fairhope , AL 36532

P: (270)535-4432
F:
E: cmanderson43@yahoo.com

Contact

ANDERSON , CHARLES M
102 Pecan Avenue
Fairhope , AL 36532

P: (270)535-4432
F:
E: cmanderson43@yahoo.com

Last Action Status

Status	Constructed	Received	07/06/2022
Purpose	Notification	Entered	07/06/2022
Mode	Interactive		

Related Applications

07/06/2022	A1218647 - Notification (NT)
07/01/2021	A1196577 - Admin Update (AU)