

## **WPFR-FM Minor Modification**

This technical report is submitted in support of minor modifications to WPFR-FM 229A at Clinton, IN, FCC facility I.D. 73712. Changes in tower site, COR AGL, antenna and ERP are proposed. The following exhibits are provided for the form 301 minor modification:

- E-1 WPFR-FM 229A Mod. Spacing Study
- E-2 WPFR-FM 229A Mod. Overlap Study
- E-3 WPFR-FM Mod. Interference Plot to WOWA(FM) 229A
- E-4 FMOver Tabulation to WOWA(FM) 229A
- E-5 HAAT Calculation
- E-6 73 dBu Longley-Rice Contour Coverage of Clinton, IN
- E-7 73 dBu Longley-Rice Contour Tabulation
- E-8 RF Calculation
- E-9 ASR 1029491

### **WPFR-FM Modification Analysis:**

A spacing study in exhibit E-1 shows the WPFR-FM modification is short-spaced to WOWA(FM) 229A at West Salem, IL, FCC facility I.D. 191487. As a result, WPFR-FM will be designated as a 73.215(c) short-spaced facility. An overlap study, interference plot and FMOver tabulation to WOWA(FM) are shown in exhibits E-2 to E-4.

The WPFR-FM modification will be located to a new tower site, ASR 1029491, at coordinates:

**39 30 14.0N 087 26 37.0W NAD83.**

An ERI LPX-3AX three bay, full wavelength-spaced non-directional antenna will be mounted at a COR AGL of 176.8 meters, 347.5 meters AMSL, 178 meters HAAT (exhibit E-5) and will operate at 1.95 kW ERP. Note that the HAAT was determined using the Commission's own web based HAAT tool and Globe terrain.

**Longley-Rice prediction is utilized to establish 73 dBu coverage of Clinton, IN:**

Exhibit E-6 demonstrates that the NEW facility will place a 73 dBu contour over one hundred percent (100) of the Clinton, IN, boundary using the Longley-Rice “first occurrence” contour calculated using the V-Soft Probe 4 software and the FCC 30 meter terrain database. Note that the 73 dBu contour is utilized to account for 3 dB of urban clutter.

Probe 4 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-7 includes a tabulation of the FCC and Longley-Rice 70 dBu contours through the range of azimuths of 7 to 15 degrees true that encompass the entire Clinton, IN boundary. The Longley-Rice 73 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 WPFR-FM modification was calculated using the FMModel program (exhibit E-8). The resulting value is  $0.447 \mu\text{W}/\text{cm}^2$  at a distance of 88.0 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, uncontrolled exposure, allowing exclusion from consideration.

**Conclusion:**

It is submitted the minor modification application for WPFR-FM is in full compliance with the Commission rules and policies.



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# E-1 WPFR-FM 229A Mod. Spacing Study

REFERENCE						DISPLAY DATES
39 30 14.00 N.				CLASS = A		DATA 01-07-22
87 26 37.00 W.				Current Spacings to 3rd Adj.		SEARCH 01-07-22
----- Channel 229 - 93.7 MHz -----						

Call	Channel	Location		Azi	Dist	FCC	Margin
WPFR-FM	LIC 229A	Clinton	IN	332.0	5.84	114.5	-108.7
WOWA	LIC-Z 229A	West Salem	IL	211.8	104.89	114.5	-9.6 <b>(1)</b>
AL4939	VAC 230A	Greenup	IL	243.2	71.91	71.5	0.41
WQTY	LIC 227B1	Linton	IN	173.6	54.85	47.5	7.4
AL6644	RSV-A 229A	French Lick	IN	144.4	123.90	114.5	9.4
WSJK	LIC-N 228A	Tuscola	IL	307.8	85.80	71.5	14.3
WREB	LIC 232A	Greencastle	IN	69.6	50.42	30.5	19.9
WJBC-FM	LIC 229B1	Pontiac	IL	324.5	171.94	142.5	29.4
WKHY	LIC 228A	Lafayette	IN	22.2	106.02	71.5	34.5
WNDX	LIC-N 230B1	Lawrence	IN	73.5	130.56	95.5	35.1
WCBH	LIC 282B1	Casey	IL	238.5	48.91	11.5	37.4
WLZT	LIC-Z 231A	Worthington	IN	127.0	76.12	30.5	45.6

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 RSV-R = reserved - needs protection, RSV-A = allocation  
 All separation margins include rounding

(1) WPFR-FM will be designated as a 73.215(c) short-spaced facility with respect to WOWA(FM) 229A.

# E-2 WPFR-FM 229A Mod. Overlap Study

REFERENCE		CH# 229A - 93.7 MHz, Pwr= 1.95 kW, HAAT= 178.0 M, COR= 347.5 M								DISPLAY DATES	
39 30 14.00 N.		Average Protected F(50-50)= 28.33 km								DATA 01-07-22	
87 26 37.00 W.		73.215 Omni-directional								SEARCH 01-07-22	
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*	
229A Clinton	WPFR-FM	LIC _CN IN	332.0 152.0	5.84 BLED20110614AAL	39 33 01.10 87 28 32.10	2.350 161		---Reference---			American Hope Communicatio
230A Greenup	AL4939«	VAC ____ IL	243.2 62.7	71.91 RM11668	39 12 38.14 88 11 15.14	6.000 100	42.6 276	27.5 From CDBS	71.5R	0.41M	
229A West Salem	WOWA	LIC ZCN IL	211.8 31.4	104.92 BLH20150701AAC	38 42 01.20 88 04 53.10	3.500 126	52.7 278	16.0 V. L. N. Broadcasting, Inc.	23.1	5.8	
227B1 Linton	WQTY«	LIC _CN IN	173.6 353.7	54.85 BLH19910408KB	39 00 46.10 87 22 23.00	12.000 145	3.9 294	45.2 The Original Company, Inc	47.5R	7.4M	
229A French Lick	AL6644«	RSV-A ____ IN	144.4 324.9	123.90 RM11412	38 35 41.19 86 36 47.98	6.000 100	86.5 293	28.1 From CDBS	114.5R	9.4M	
228A Tuscola	WSJK«	LIC NCN IL	307.8 127.3	85.80 BLH20140124ABQ	39 58 25.10 88 14 18.20	5.000 110	44.7 319	29.1 S. J. Broadcasting, LLC	71.5R	14.3M	
232A Greencastle	WREB«	LIC _HN IN	69.6 249.9	50.42 BLH3278	39 39 38.10 86 53 34.00	3.000 49	1.9 285	18.3 The Original Company, Inc	30.5R	19.9M	
229B1 Pontiac	WJBC-FM«	LIC _CN IL	324.5 143.8	171.94 BLH19950117KB	40 45 27.10 88 37 40.20	12.000 144	103.7 353	43.6 Cumulus Li censi ng LLC	142.5R	29.4M	
228A Lafayette	WKHY«	LIC _CN IN	22.2 202.5	106.02 BLH20140819ABR	40 23 12.10 86 58 14.00	6.000 76	32.5 273	21.8 Neuhoff Media Lafayette, L	71.5R	34.5M	
230B1 Lawrence	WNDX«	LIC NCN IN	73.5 254.4	130.56 BLH20120301AEG	39 49 39.10 85 58 50.90	8.400 140	55.0 393	42.5 Radio Li cense Holdi ng Src	95.5R	35.1M	
282B1 Casey	WCBH«	LIC _CN IL	238.5 58.2	48.91 BLH20171222AAU	39 16 24.10 87 55 39.10	12.500 145	30.0 329	9.1 The Cromwell Group, Inc. 0	11.5R	37.4M	
231A Worthington	WLZT«	LIC ZCN IN	127.0 307.5	76.12 BLH20180226ABG	39 05 23.20 86 44 25.00	4.800 112	2.0 335	23.7 Mid-America Radio Group, I	30.5R	45.6M	

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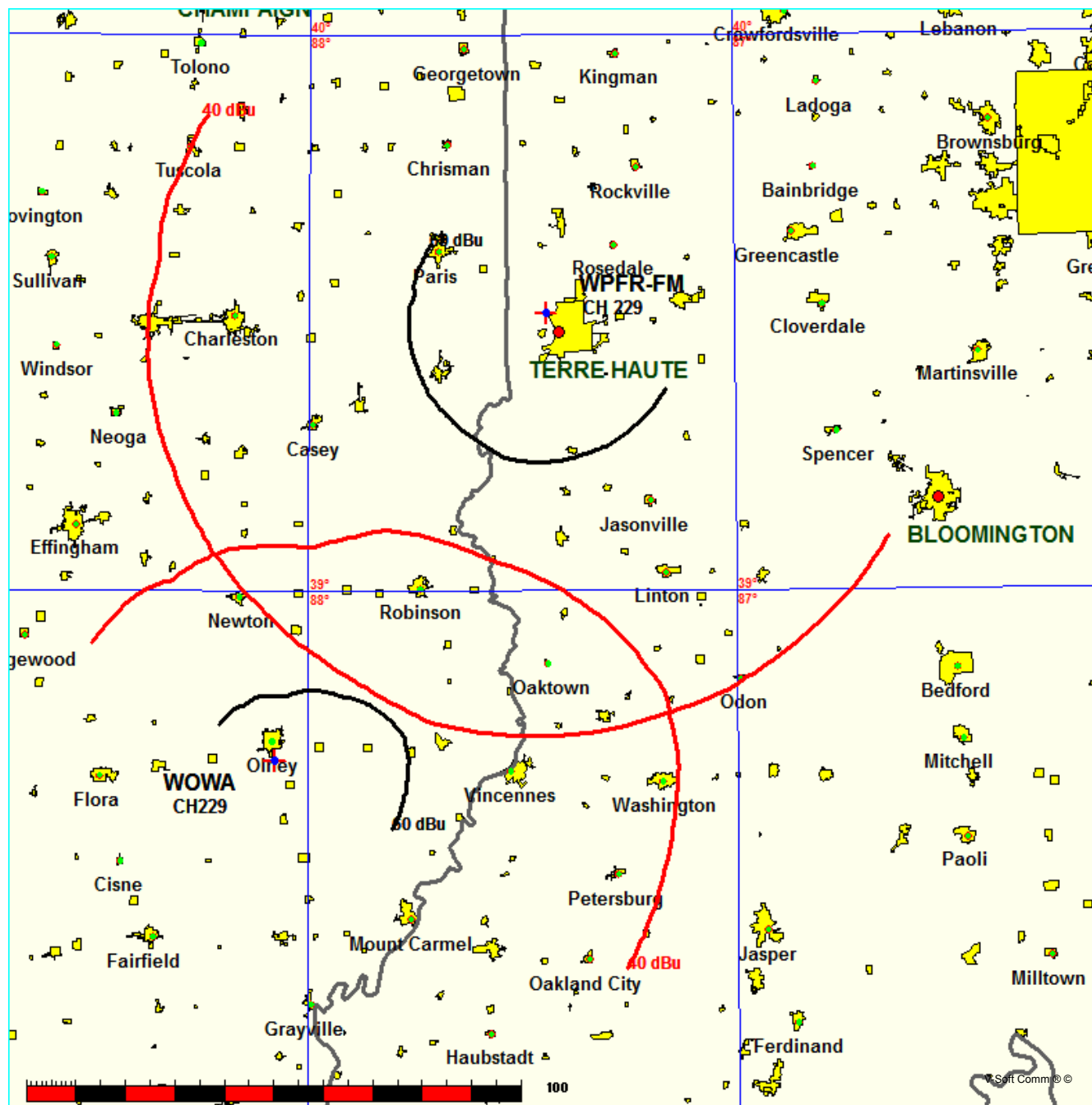
Terrain database is FCC 30 meter , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM  
Contour distances are on direct line to and from reference station. Reference zone= - Zone 1, Co to 3rd adjacent.  
All separation margins (if shown) include rounding.  
Ant Column: (D= DA 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.  
< = Contour Overlap

# E-3 WPFR-FM 229A Mod. Interference Plot to WOWA(FM) 229A

FMCommander Single Allocation Study - 01-07-2022 - FCC 30 meter  
WPFR-FM's Overlaps (In= 23.1 km, Out= 5.77 km)

WPFR-FM CH 229 A 73.215 N  
Lat= 39 30 14.00, Lng= 87 26 37.00  
1.95 kW 178 m HAAT, 347.5 m COR  
Prot.= 60 dBu, Intef.= 40 dBu

WOWA CH 229 A 73.215 Z BLH20150701AAC  
Lat= 38 42 01.20, Lng= 88 04 53.10  
3.5 kW 126 m HAAT, 278 m COR  
Prot.= 60 dBu, Intef.= 40 dBu



# E-4 WPFR-FM Mod. FMOver Tabulation to WOWA(FM) 229A

WOWA BLH20150701AAC

WPFR-FM

Channel = 229A

Max ERP = 3.5 kW

RCAMSL = 278 m

N. Lat. 38 42 01.20

W. Lng. 88 04 53.10

Protected

60 dBu

Terrain Data: FCC 30 meter

Channel = 229A

Max ERP = 1.95 kW

RCAMSL = 347.5 m

N. Lat. 39 30 14.00

W. Lng. 87 26 37.00

Interfering

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
331.0	000.1198	0128.2	012.1	217.9	001.9500	0187.4	099.5	35.03	
332.0	000.1198	0129.5	012.2	217.9	001.9500	0187.4	099.3	35.09	
333.0	000.1198	0131.0	012.2	217.9	001.9500	0187.4	099.1	35.15	
334.0	000.1198	0132.4	012.3	217.8	001.9500	0187.5	098.9	35.22	
335.0	000.1198	0132.9	012.3	217.8	001.9500	0187.7	098.6	35.28	
336.0	000.1198	0133.8	012.4	217.8	001.9500	0187.8	098.4	35.34	
337.0	000.1198	0134.4	012.4	217.7	001.9500	0188.0	098.2	35.41	
338.0	000.1198	0135.3	012.4	217.7	001.9500	0188.1	098.0	35.47	
339.0	000.1198	0135.8	012.5	217.6	001.9500	0188.1	097.8	35.53	
340.0	000.1198	0136.3	012.5	217.6	001.9500	0188.1	097.6	35.58	
341.0	000.1198	0136.9	012.5	217.5	001.9500	0188.2	097.4	35.64	
342.0	000.1198	0137.9	012.6	217.5	001.9500	0188.2	097.2	35.70	
343.0	000.1198	0138.8	012.6	217.4	001.9500	0188.1	097.0	35.75	
344.0	000.1198	0139.3	012.6	217.3	001.9500	0188.0	096.8	35.81	
345.0	000.1198	0139.6	012.6	217.3	001.9500	0188.0	096.7	35.86	
346.0	000.1198	0139.9	012.6	217.2	001.9500	0188.1	096.5	35.91	
347.0	000.1198	0140.5	012.7	217.1	001.9500	0188.3	096.3	35.98	
348.0	000.1198	0141.3	012.7	217.1	001.9500	0188.6	096.1	36.04	
349.0	000.1198	0141.3	012.7	217.0	001.9500	0188.9	095.9	36.10	
350.0	000.1198	0139.6	012.6	216.8	001.9500	0189.2	095.8	36.14	
351.0	000.1204	0139.3	012.6	216.7	001.9500	0189.4	095.7	36.20	
352.0	000.1211	0138.7	012.6	216.6	001.9500	0189.5	095.5	36.24	
353.0	000.1217	0137.8	012.6	216.5	001.9500	0189.5	095.4	36.28	
354.0	000.1224	0137.0	012.6	216.4	001.9500	0189.1	095.2	36.31	
355.0	000.1230	0136.6	012.6	216.3	001.9500	0188.8	095.1	36.33	
356.0	000.1237	0136.7	012.6	216.2	001.9500	0188.8	094.9	36.38	
357.0	000.1244	0136.0	012.6	216.1	001.9500	0188.4	094.8	36.40	
358.0	000.1250	0136.0	012.6	216.0	001.9500	0188.1	094.7	36.44	
359.0	000.1257	0135.5	012.6	215.9	001.9500	0188.0	094.5	36.47	
000.0	000.1263	0135.0	012.6	215.8	001.9500	0188.4	094.4	36.52	
001.0	000.1277	0134.9	012.6	215.7	001.9500	0188.3	094.3	36.56	
002.0	000.1290	0134.3	012.6	215.6	001.9500	0188.1	094.1	36.59	
003.0	000.1304	0133.6	012.6	215.5	001.9500	0188.1	094.0	36.63	

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
004.0	000.1317	0132.8	012.6	215.4	001.9500	0188.3	093.9	36.66
005.0	000.1331	0132.0	012.6	215.3	001.9500	0188.4	093.8	36.70
006.0	000.1345	0131.1	012.6	215.1	001.9500	0188.3	093.7	36.72
007.0	000.1358	0130.2	012.6	215.0	001.9500	0188.2	093.6	36.75
008.0	000.1372	0129.7	012.6	214.9	001.9500	0188.1	093.5	36.78
009.0	000.1386	0129.1	012.6	214.8	001.9500	0188.0	093.4	36.80
010.0	000.1400	0129.0	012.6	214.7	001.9500	0188.1	093.3	36.84
011.0	000.1471	0128.1	012.7	214.6	001.9500	0188.2	093.1	36.90
012.0	000.1544	0127.5	012.8	214.5	001.9500	0188.2	092.9	36.96
013.0	000.1618	0126.7	012.9	214.4	001.9500	0188.2	092.7	37.01
014.0	000.1694	0126.0	013.1	214.3	001.9500	0188.2	092.6	37.07
015.0	000.1772	0126.2	013.2	214.2	001.9500	0188.2	092.3	37.14
016.0	000.1852	0125.7	013.3	214.0	001.9500	0188.2	092.1	37.19
017.0	000.1933	0126.3	013.5	213.9	001.9500	0187.9	091.9	37.25
018.0	000.2016	0126.7	013.7	213.8	001.9500	0187.8	091.7	37.31
019.0	000.2101	0126.7	013.8	213.7	001.9500	0188.1	091.5	37.38
020.0	000.2188	0126.9	014.0	213.6	001.9500	0188.1	091.3	37.45
021.0	000.2294	0127.4	014.2	213.4	001.9500	0188.3	091.0	37.53
022.0	000.2403	0128.0	014.4	213.3	001.9500	0188.3	090.8	37.61
023.0	000.2514	0128.6	014.6	213.2	001.9500	0188.3	090.5	37.68
024.0	000.2628	0129.3	014.8	213.0	001.9500	0188.3	090.3	37.76
025.0	000.2744	0130.1	015.0	212.9	001.9500	0188.0	090.0	37.82
026.0	000.2863	0130.8	015.2	212.8	001.9500	0188.2	089.8	37.91
027.0	000.2984	0131.0	015.4	212.6	001.9500	0188.8	089.6	38.00
028.0	000.3108	0130.2	015.5	212.4	001.9500	0188.8	089.4	38.04
029.0	000.3235	0129.6	015.7	212.3	001.9500	0188.9	089.3	38.09
030.0	000.3364	0128.3	015.8	212.1	001.9500	0188.9	089.2	38.12
031.0	000.3528	0127.4	015.9	211.9	001.9500	0189.4	089.0	38.18
032.0	000.3697	0125.9	016.0	211.7	001.9500	0189.2	088.9	38.21
033.0	000.3869	0125.3	016.2	211.5	001.9500	0189.3	088.7	38.27
034.0	000.4046	0124.3	016.3	211.4	001.9500	0189.2	088.6	38.30
035.0	000.4226	0123.4	016.5	211.2	001.9500	0189.6	088.5	38.36
036.0	000.4411	0122.8	016.6	211.0	001.9500	0189.6	088.3	38.40
037.0	000.4599	0122.1	016.8	210.8	001.9500	0190.0	088.2	38.45
038.0	000.4792	0120.6	016.9	210.6	001.9500	0190.6	088.2	38.49
039.0	000.4988	0120.4	017.1	210.4	001.9500	0191.0	088.0	38.54
040.0	000.5188	0120.2	017.2	210.2	001.9500	0190.9	087.9	38.57
041.0	000.5447	0119.1	017.4	209.9	001.9500	0190.8	087.8	38.60
042.0	000.5713	0118.1	017.5	209.7	001.9500	0190.7	087.8	38.62
043.0	000.5984	0117.6	017.7	209.5	001.9500	0190.1	087.6	38.63
044.0	000.6263	0117.5	017.9	209.3	001.9500	0189.6	087.5	38.65
045.0	000.6547	0116.4	018.0	209.1	001.9500	0189.8	087.5	38.67
046.0	000.6838	0115.6	018.2	208.8	001.9500	0190.5	087.4	38.71
047.0	000.7135	0114.8	018.3	208.6	001.9500	0190.5	087.4	38.72
048.0	000.7438	0115.0	018.6	208.4	001.9500	0190.7	087.3	38.76
049.0	000.7748	0115.8	018.8	208.1	001.9500	0191.1	087.2	38.82
050.0	000.8064	0116.4	019.1	207.8	001.9500	0191.4	087.1	38.86
051.0	000.8472	0117.8	019.4	207.5	001.9500	0191.6	086.9	38.93
052.0	000.8891	0118.8	019.7	207.2	001.9500	0191.3	086.7	38.96
053.0	000.9319	0119.5	020.0	207.0	001.9500	0191.8	086.6	39.02
054.0	000.9757	0120.1	020.3	206.7	001.9500	0191.9	086.5	39.05



Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)
055.0	001.0206	0120.8	020.6	206.4	001.9500	0192.6	086.5	39.10
056.0	001.0665	0121.4	020.8	206.1	001.9500	0193.1	086.4	39.13
057.0	001.1133	0122.0	021.1	205.8	001.9500	0192.8	086.4	39.13
058.0	001.1612	0122.6	021.4	205.5	001.9500	0192.8	086.4	39.14
059.0	001.2101	0123.5	021.6	205.2	001.9500	0193.1	086.3	39.16
060.0	001.2600	0123.9	021.9	204.9	001.9500	0193.8	086.4	39.18
061.0	001.3238	0123.7	022.1	204.6	001.9500	0194.6	086.4	39.20
062.0	001.3891	0123.6	022.4	204.3	001.9500	0195.3	086.4	39.21
063.0	001.4561	0123.3	022.6	204.0	001.9500	0195.6	086.5	39.20
064.0	001.5246	0123.1	022.8	203.7	001.9500	0195.9	086.6	39.19
065.0	001.5947	0123.7	023.1	203.4	001.9500	0196.4	086.6	39.19
066.0	001.6663	0124.8	023.4	203.0	001.9500	0197.1	086.7	39.20
067.0	001.7396	0125.5	023.7	202.7	001.9500	0197.4	086.8	39.19
068.0	001.8144	0126.0	024.0	202.4	001.9500	0197.7	086.9	39.17
069.0	001.8908	0125.8	024.2	202.1	001.9500	0197.8	087.0	39.12
070.0	001.9688	0125.3	024.3	201.8	001.9500	0197.9	087.2	39.07
071.0	002.0644	0125.4	024.6	201.5	001.9500	0198.2	087.4	39.03
072.0	002.1623	0124.9	024.8	201.2	001.9500	0198.6	087.6	38.99
073.0	002.2625	0124.3	025.0	200.9	001.9500	0198.8	087.8	38.93
074.0	002.3649	0123.7	025.2	200.7	001.9500	0198.8	088.0	38.86
075.0	002.4696	0123.0	025.4	200.4	001.9500	0198.6	088.3	38.77
076.0	002.5766	0123.0	025.7	200.1	001.9500	0199.0	088.5	38.71
077.0	002.6858	0123.5	025.9	199.8	001.9500	0199.4	088.7	38.66
078.0	002.7973	0123.8	026.2	199.5	001.9500	0200.3	089.0	38.62
079.0	002.9111	0124.0	026.4	199.2	001.9500	0201.2	089.2	38.56
080.0	003.0272	0124.7	026.7	198.9	001.9500	0202.2	089.5	38.52
081.0	003.0729	0124.6	026.8	198.7	001.9500	0202.7	089.9	38.43
082.0	003.1190	0123.5	026.8	198.6	001.9500	0202.9	090.3	38.30
083.0	003.1654	0122.5	026.8	198.4	001.9500	0203.1	090.7	38.18
084.0	003.2122	0121.4	026.8	198.3	001.9500	0203.4	091.2	38.06
085.0	003.2593	0121.8	026.9	198.1	001.9500	0203.8	091.5	37.96
086.0	003.3067	0122.0	027.0	198.0	001.9500	0204.1	091.9	37.85
087.0	003.3545	0121.5	027.1	197.8	001.9500	0204.3	092.4	37.73
088.0	003.4027	0121.6	027.2	197.7	001.9500	0204.7	092.8	37.62
089.0	003.4512	0121.4	027.2	197.6	001.9500	0205.0	093.2	37.50
090.0	003.5000	0121.5	027.3	197.4	001.9500	0205.4	093.6	37.38

## Antenna Height Above Average Terrain Calculations -- Results

### Input Data

Latitude    **39° 30' 14"** North  
Longitude   **87° 26' 37"** West   (NAD 83)

Height of antenna radiation center above mean sea level: **347.5** meters AMSL

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

### Results

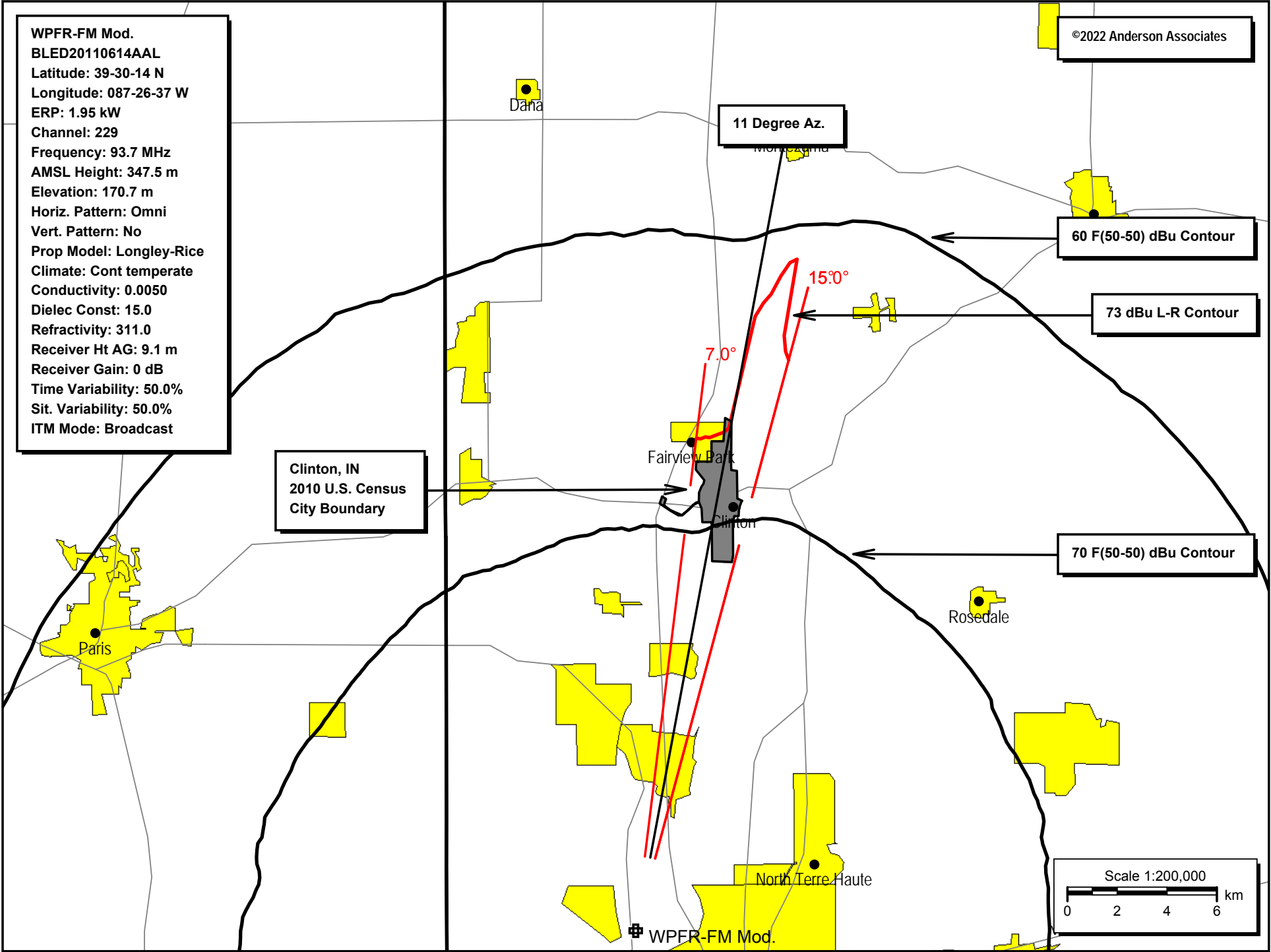
Calculated HAAT = **178 meters**

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

### Individual "Radial HAAT" Values, in meters

0°	171.1 m
45°	186.7 m
90°	182.2 m
135°	186.5 m
180°	201.4 m
225°	182.0 m
270°	160.4 m
315°	152.7 m

E-6 WPFR-FM 229A Mod. Longley-Rice 73 dBu Contour Plot



## E-7 WPFR-FM 229A Contour Distance Calculation Table

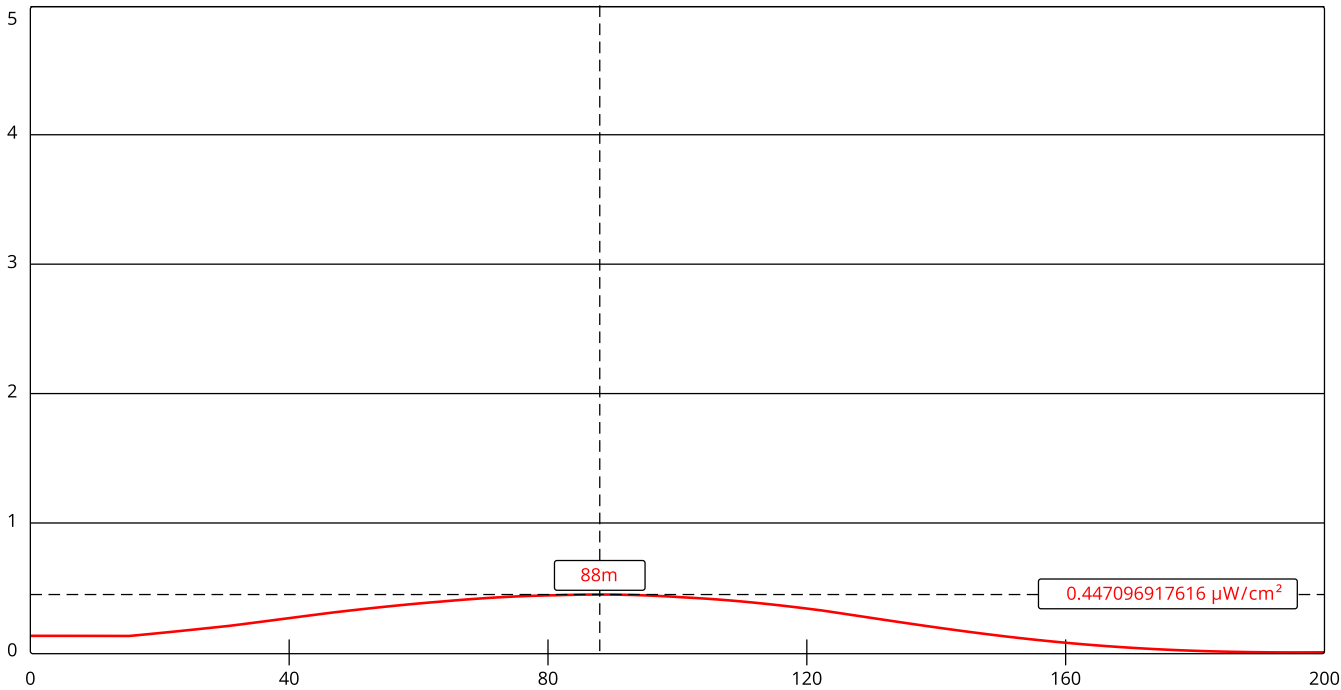
<b>Azimuth°</b>	<b>60 dBu<sup>(1)</sup> km</b>	<b>70 dBu<sup>(1)</sup> km</b>	<b>73 dBu L-R<sup>(2)</sup> km</b>	<b>% &gt; 70 dBu</b>
<b>07</b>	<b>28.0</b>	<b>16.1</b>	<b>19.9</b>	<b>24</b>
<b>08</b>	<b>28.0</b>	<b>16.1</b>	<b>20.0</b>	<b>24</b>
<b>09</b>	<b>28.0</b>	<b>16.2</b>	<b>20.1</b>	<b>24</b>
<b>10</b>	<b>28.3</b>	<b>16.3</b>	<b>20.3</b>	<b>25</b>
<b>11</b>	<b>28.6</b>	<b>16.6</b>	<b>25.1</b>	<b>51</b>
<b>12</b>	<b>28.8</b>	<b>16.7</b>	<b>26.1</b>	<b>56</b>
<b>13</b>	<b>29.0</b>	<b>16.9</b>	<b>27.5</b>	<b>63</b>
<b>14</b>	<b>29.2</b>	<b>16.9</b>	<b>24.6</b>	<b>46</b>
<b>15</b>	<b>29.3</b>	<b>17.0</b>	<b>23.7</b>	<b>39</b>

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

(2) Longley-Rice first occurrence 70 dBu contour calculated using Probe 4 and the FCC 30 meter terrain data. 73 dBu utilized to account for 3 dB of urban clutter.

\* The 7 to 15 degree azimuths encompass the Clinton, IN 2010 U.S. Census boundary.

E-8 WPFR-FM 229A Mod. RF Calculation



Channel Selection	Channel 229 (93.7 MHz) ▼		
<a href="#">Antenna Type +</a>	EPA Type 3: Opposed U Dipole ▼		
Height (m)	<input type="text" value="176.8"/>	Distance (m)	<input type="text" value="200"/>
ERP-H (W)	<input type="text" value="1950"/>	ERP-V (W)	<input type="text" value="1950"/>
Num of Elements	<input type="text" value="3"/>	Element Spacing (λ)	<input type="text" value="1"/>
Num of Points	<input type="text" value="500"/>		

## ASR Registration 1029491

### Registration Detail

Reg Number	1029491	Status	Constructed
File Number	A0398320	Constructed	05/01/1997
EMI	No	Dismantled	
NEPA	No		

### Antenna Structure

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

#### Location (in NAD83 Coordinates)

Lat/Long	39-30-14.0 N 087-26-37.0 W	Address	1647 W MULBERRY AVE
City, State	TERRE HAUTE , IN		
Zip	47885	County	VIGO
Center of AM Array		Position of Tower in Array	

#### Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
170.7	210.0
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
380.7	210.0

### Painting and Lighting Specifications

FAA Chapters 3, 4, 5, 13

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

### FAA Notification

FAA Study	97-AGL-2450-OE	FAA Issue Date	06/03/1997
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### Owner & Contact Information

FRN	0005590146	Owner Entity Type
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#### Owner

RICE , MIKE S	P: (636)946-2430
216 RIO VISTA DRIVE	F:
ST CHARLES , MO 63303	E:

#### Contact

P:  
F:  
E:

### Last Action Status

Status	Constructed	Received	09/24/2004
Purpose	Admin Update	Entered	09/28/2004
Mode	Mail In (Manual)		

### Related Applications

09/24/2004	A0398320 - Admin Update (AU)
09/12/1997	A0034969 - New (NE)