

Attachment to WDTZ-LP Application for Construction Permit

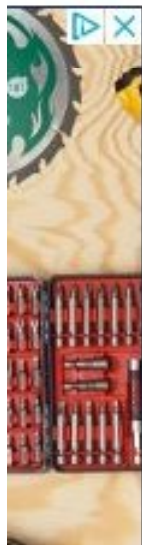
October 2020

The following pages show lack of interference to support the submittal for a Minor Change Construction Permit for WDTZ-LP.

The last page in this attachment is a copy of the FCC FM Query at the proposed transmitter location. It provides data to:

- confirm that the proposed move is 0.790 km from the current licensed location. There is significant overlap in primary coverage of the existing and proposed antenna location, complying with requirement as a Minor Change.
- show all other stations within 120km that are co-channel, first adjacent, second-adjacent or third-adjacent to 98.1MHz. That data was used for an analysis to confirm that all but one nearby station has more than adequate separation. A separate “no interference over a populated area” analysis shows that the interference to WRRM, 98.5 MHz, extends only 5m from the WDTZ-LP antenna. There is no impact to any listeners.

<https://www.latlong.net/convert-address-to-lat-long.html>



Address

289 Ihle Drive, Cincinnati, OH 45238

Find

Write city name with country code for better results.

Latitude

39.088920

Longitude

-84.604180



FMpower - Find ERP for an FM Station Class

Databases & Searches

AM Query

Antenna Height Above Average Terrain (HAAT) Calculator

Antenna Structure Registration (ASRN) Records Within A Radius

Broadcast Station Mailing Address Search

Call Sign Reservation and Authorization System (CSRS)

CDBS Database Public Files

Children's Educational Television Reporting - Form 2100, Schedule H

FMPOWER uses the [FM propagation curves program](#) to calculate the effective radiated power (ERP) needed to achieve facilities equivalent to the reference facilities for an FM station class. Only three pieces of information are required to use this program -- the U.S. state of interest, the station class, and the [antenna height above average terrain \(HAAT\)](#). The HAAT for a particular FM station may be found via the [FM Query](#). [More after the form.](#)

Choose a U.S. State or Possession:

Station Class:

meters Antenna Height Above Average Terrain (HAAT)

Results:

Calculated ERP (rounded per Section 73.212) = 0.032 kW

Interference Contour Calculations – 98.1 from 39-5-20.1 N and 84-36-15.1 W, NICOM BKG Non-Directional Antenna

Take ERP at a given HAAT, looking at 98.1 MHz to ensure that the translator's interference contour will not overlap the protected contour of other nearby stations. If the distance of the protected contour plus the distance of the worst-case interference contour is less than the distance between stations, there is no possible overlap using contour protection techniques.

Station and	Facility	Station		Azimuth	Dist.	Other Station's (50,50) Primary Coverage Contour toward 98.1				FCC LPFM Rules Article 73.807	
Call Sign	ID #	Clas	Freq.	Degrees	km	W	HAAT	dBu	km	Req. Distance km	Compliance?
LIC - WOXY, Mason, OH	3653	A	97.7	24.54	52.18	2,700	189 m	60	31.44	29	Yes
LIC - WBUL, Lexington, KY	70192	C1	98.1	173.44	117.71	100,000	184 m	60	62.29	111	Yes
LIC – WZZY, Winchester, IN	71415	A	98.3	345.74	114.73	3,000	86 m	60	42.32	56	Yes
LIC – WRRM, Cincinnati, OH	3142	B	98.5	52.93	6.11	18,000	213 m	54	61.84	67	No - See note below

Note: WRRM (LIC) Interference Analysis:

The proposed LPFM relocation is within the 54 dbu contour of upper second adjacent station WRRM (LIC) channel 268. The WRRM (LIC) contour at the translator site is 97.787 dBμ f(50,50). Using the ratio of 100:1 (translator to WRRM) on the second adjacent channel, the interference contour affecting WRRM (LIC) extends to the 137.787 dBμ (97.787 dBμ + 40 dBμ) contour.

Using the free space equation, the predicted interference area extends five (5) meters from the antenna. This interference area does not reach the base of the tower.

The interference area will never reach the nearest residence outside of the transmitter site facility, which is 37 feet (11 meters) from the tower. The interference area will never reach the nearest public street, which is 70 feet (21 meters) from the base of the tower. Therefore, the application is in compliance as it demonstrates that no actual interference will occur due to intervening terrain, lack of population or such other factors as may be applicable.

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **39° 5' 20.1" North**
Longitude **84° 36' 15.1" West** (NAD 83)

These coordinates convert to NAD 27 coordinates of
39° 05' 19.89", North, 84° 36' 15.30" West (NAD 27).

Height of antenna radiation center above mean sea level: **280 meters AMSL**

Number of Evenly Spaced Radials = **360** 0° is referenced to True North

Results

Calculated HAAT = **52 meters**

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

Individual "Radial HAAT" Values, in meters

0°	10.0 m	120°	68.2 m	240°	30.6 m
1°	10.0 m	121°	70.8 m	241°	30.7 m
2°	10.3 m	122°	74.2 m	242°	30.9 m
3°	11.5 m	123°	77.2 m	243°	31.4 m
4°	13.1 m	124°	79.3 m	244°	32.0 m
5°	15.2 m	125°	81.2 m	245°	32.9 m
6°	17.4 m	126°	82.5 m	246°	33.6 m
7°	19.0 m	127°	83.2 m	247°	34.2 m
8°	20.4 m	128°	82.4 m	248°	34.3 m
9°	21.8 m	129°	79.4 m	249°	33.7 m
10°	23.0 m	130°	74.5 m	250°	32.9 m
11°	23.7 m	131°	68.6 m	251°	32.7 m
12°	24.4 m	132°	63.5 m	252°	33.2 m
13°	25.5 m	133°	60.5 m	253°	34.2 m
14°	26.4 m	134°	59.0 m	254°	34.9 m
15°	27.1 m	135°	58.1 m	255°	34.8 m
16°	27.9 m	136°	57.6 m	256°	34.5 m
17°	28.4 m	137°	57.9 m	257°	34.2 m
18°	29.3 m	138°	58.6 m	258°	34.4 m
19°	30.7 m	139°	59.5 m	259°	35.2 m
20°	32.3 m	140°	59.3 m	260°	36.1 m
21°	33.5 m	141°	57.2 m	261°	37.1 m
22°	34.4 m	142°	53.9 m	262°	38.4 m
23°	35.5 m	143°	50.9 m	263°	40.1 m
24°	36.8 m	144°	48.7 m	264°	42.2 m
25°	38.7 m	145°	47.2 m	265°	44.5 m
26°	40.3 m	146°	46.3 m	266°	47.1 m
27°	41.8 m	147°	45.9 m	267°	50.3 m

28°	44.4 m	148°	45.7 m	268°	53.7 m
29°	48.9 m	149°	46.0 m	269°	57.5 m
30°	54.3 m	150°	47.2 m	270°	61.3 m
31°	59.7 m	151°	47.9 m	271°	65.1 m
32°	65.0 m	152°	46.4 m	272°	70.0 m
33°	70.4 m	153°	43.2 m	273°	74.4 m
34°	76.0 m	154°	40.8 m	274°	77.5 m
35°	82.4 m	155°	40.6 m	275°	78.8 m
36°	88.5 m	156°	41.2 m	276°	76.9 m
37°	93.7 m	157°	40.7 m	277°	74.9 m
38°	97.7 m	158°	38.9 m	278°	73.2 m
39°	100.4 m	159°	37.7 m	279°	74.8 m
40°	102.1 m	160°	37.3 m	280°	77.9 m
41°	102.7 m	161°	37.2 m	281°	80.6 m
42°	102.1 m	162°	36.6 m	282°	81.6 m
43°	100.9 m	163°	36.0 m	283°	81.3 m
44°	99.3 m	164°	35.2 m	284°	82.1 m
45°	97.4 m	165°	34.5 m	285°	82.8 m
46°	95.3 m	166°	33.7 m	286°	83.8 m
47°	93.0 m	167°	33.0 m	287°	83.5 m
48°	90.7 m	168°	32.3 m	288°	82.4 m
49°	88.5 m	169°	31.6 m	289°	82.3 m
50°	86.1 m	170°	30.2 m	290°	82.4 m
51°	83.3 m	171°	28.6 m	291°	82.7 m
52°	80.4 m	172°	27.6 m	292°	82.9 m
53°	78.0 m	173°	27.5 m	293°	82.8 m
54°	76.2 m	174°	27.5 m	294°	83.4 m
55°	75.2 m	175°	27.1 m	295°	84.4 m
56°	74.8 m	176°	26.3 m	296°	85.5 m
57°	75.2 m	177°	24.8 m	297°	86.2 m
58°	76.1 m	178°	23.0 m	298°	86.1 m
59°	77.1 m	179°	22.2 m	299°	85.3 m
60°	77.7 m	180°	22.0 m	300°	83.8 m
61°	78.3 m	181°	21.9 m	301°	81.2 m
62°	78.7 m	182°	21.5 m	302°	77.4 m
63°	79.5 m	183°	20.8 m	303°	72.9 m
64°	80.3 m	184°	20.7 m	304°	68.0 m
65°	80.9 m	185°	20.9 m	305°	63.7 m
66°	81.1 m	186°	21.4 m	306°	60.3 m
67°	81.2 m	187°	21.9 m	307°	57.3 m
68°	81.8 m	188°	22.3 m	308°	54.4 m
69°	83.3 m	189°	22.1 m	309°	51.3 m
70°	85.9 m	190°	21.3 m	310°	48.0 m
71°	89.1 m	191°	20.5 m	311°	45.1 m
72°	92.9 m	192°	19.7 m	312°	42.7 m
73°	96.9 m	193°	19.1 m	313°	40.5 m
74°	101.5 m	194°	18.6 m	314°	38.0 m
75°	105.8 m	195°	18.2 m	315°	35.6 m
76°	108.6 m	196°	17.8 m	316°	34.2 m
77°	109.8 m	197°	17.8 m	317°	33.3 m
78°	109.3 m	198°	18.2 m	318°	32.3 m
79°	108.8 m	199°	18.1 m	319°	31.2 m
80°	109.2 m	200°	17.7 m	320°	30.9 m
81°	110.7 m	201°	17.6 m	321°	31.6 m
82°	111.4 m	202°	17.7 m	322°	32.8 m
83°	110.4 m	203°	17.8 m	323°	34.0 m
84°	109.3 m	204°	18.1 m	324°	35.7 m

85°	108.8 m	205°	18.8 m	325°	37.7 m
86°	108.7 m	206°	19.3 m	326°	39.5 m
87°	108.5 m	207°	19.2 m	327°	40.6 m
88°	107.9 m	208°	19.2 m	328°	40.9 m
89°	106.4 m	209°	19.8 m	329°	40.1 m
90°	104.7 m	210°	20.8 m	330°	38.4 m
91°	103.0 m	211°	21.6 m	331°	37.3 m
92°	101.3 m	212°	22.0 m	332°	37.0 m
93°	99.5 m	213°	22.0 m	333°	37.4 m
94°	97.9 m	214°	21.7 m	334°	37.9 m
95°	96.2 m	215°	21.7 m	335°	38.3 m
96°	94.6 m	216°	22.1 m	336°	38.0 m
97°	92.6 m	217°	23.0 m	337°	36.5 m
98°	91.0 m	218°	24.1 m	338°	34.6 m
99°	89.6 m	219°	25.1 m	339°	33.5 m
100°	89.0 m	220°	25.6 m	340°	32.4 m
101°	89.2 m	221°	25.9 m	341°	31.0 m
102°	89.1 m	222°	26.7 m	342°	30.3 m
103°	88.7 m	223°	28.3 m	343°	30.2 m
104°	87.6 m	224°	30.2 m	344°	28.9 m
105°	86.1 m	225°	31.6 m	345°	26.5 m
106°	84.6 m	226°	31.9 m	346°	24.3 m
107°	82.5 m	227°	30.8 m	347°	22.9 m
108°	80.2 m	228°	29.0 m	348°	22.0 m
109°	78.0 m	229°	27.7 m	349°	21.8 m
110°	75.7 m	230°	27.1 m	350°	21.8 m
111°	72.7 m	231°	26.8 m	351°	21.7 m
112°	69.6 m	232°	26.8 m	352°	21.4 m
113°	66.8 m	233°	27.4 m	353°	20.3 m
114°	65.1 m	234°	28.1 m	354°	18.5 m
115°	64.9 m	235°	28.7 m	355°	16.6 m
116°	65.5 m	236°	29.1 m	356°	14.9 m
117°	66.1 m	237°	29.5 m	357°	12.9 m
118°	66.4 m	238°	29.9 m	358°	11.0 m
119°	66.8 m	239°	30.3 m	359°	10.0 m

Proposed WDTZ-LP Transmitter Site - No Interference to Reception of WRRM



Data for WDTZ-LP Application for Construction Permit (October 2020)

FM Query now uses LMS data. Coordinates are now NAD83.

FM Query Results

Sun Oct 4 11:53:02 2020

Eastern time

9

Resize Results

FCC Since October 1999: AM Query FM
Query TV Query 20Years

----- Search Parameters -----

Facility ID: 0
Search Radius (km): 120.00
Center Latitude): N 39 5 20.10
Center Longitude): W 84 36 15.10
Lower Channel: 248
Upper Channel: 254

- Use the TEXT SIZE input on the [FM Query](#) page to change the text size in the list below, for easier printing or viewing.
- Click on the blue Call Sign or blue Facility ID Number to retrieve more detailed information from the FM Query, including access to the LMS database records pertaining to that station.
- Records for stations outside the USA are derived from international notifications.
- License, application, and construction permit (CP) coordinates shown in the FM Query are NAD83 coordinates.

Call-----	Class	Frequency	Status	City	File Number	FacilityID	ERP	DA?	HAAT	RCAMSL	RCAGL	Latitude	Longitude	Dist(km)	Dist(mi)	Azimuth	Licensee/Permittee
W248AF	248 D	FX 97.5 MHz	LIC	BATESVILLE	INBLFT-20070518ABA	142694	0.12 kW		20.4 m	308. m	19. m	N 39 18 23.1	W 85 13 5.8	58.29 km	36.22 mi	294.76°	GOOD SHEPHERD RADIO, INC
WVNU	248 A	FM 97.5 MHz	LIC	GREENFIELD	OHBMHL-20120430ACD	61331	2.3 kW		164. m	450. m	148. m	N 39 24 26.8	W 83 21 13.7	113.59 km	70.58 mi	71.40°	SOUTHERN OHIO BR.
W249DG	249 D	FX 97.7 MHz	LIC	NORTH VERNON	INBLFT-20160506AAR	141722	0.25 kW		0. m	269. m	47. m	N 38 59 51.8	W 85 38 48.0	90.82 km	56.43 mi	263.90°	JENNINGS COUNTY PRO.
W249DJ	249 D	FX 97.7 MHz	LIC	LEXINGTON	KYBLFT-20161114ABF	158396	0.25 kW	DA	0. m	476. m	150. m	N 38 2 6.0	W 84 27 2.0	117.75 km	73.17 mi	173.45°	CLEAR CHANNEL BROADCASTING
WOXY	249 A	FM 97.7 MHz	LIC	MASON	OHBLH-20120917ACM	3653	2.7 kW		151.5 m	399. m	135.9 m	N 39 30 57.2	W 84 21 4.8	52.18 km	32.42 mi	24.54°	LAZO MEDIA LLC
WGJM-LP	250 LP1	FL 97.9 MHz	LIC	ENGLEWOOD	OHBL-20080702ACT	132271	0.1 kW		29. m	313. m	36. m	N 39 53 5.1	W 84 19 0.8	91.75 km	57.01 mi	15.48°	M&M COMMUNITY DEVELOPMENT
W251CK	251 D	FX 98.1 MHz	LIC	COLUMBUS	INBLFT-20180312AAY	201117	0.25 kW		0. m	224. m	30. m	N 39 13 58.1	W 85 55 17.9	114.98 km	71.45 mi	278.43°	WHITE RIVER BR. CO.
WBUL-FM	251 C1	FM 98.1 MHz	LIC	LEXINGTON	KYBMLH-20031218ACF	70192	100. kW		171. m	467. m	141. m	N 38 2 7.3	W 84 27 1.8	117.71 km	73.14 mi	173.44°	CITICASTERS LICENSES, INC.
WUDR	251 D	FM 98.1 MHz	LIC	DAYTON	OHBLD-20060228AAA	69423	0.013 kW		27.3 m	296.2 m	27.4 m	N 39 47 14.2	W 84 14 22.8	83.64 km	51.97 mi	21.84°	UNIVERSITY OF DAYTON
WDTZ-LP	251 LP1	FL 98.1 MHz	LIC	DELHI TWP.	OHBL-20140624ACM	192655	0.023 kW		60.6 m	286. m	8. m	N 39 5 45.6	W 84 36 16.1	0.79 km	0.49 mi	358.26°	DELHI PUBLIC RADIO, INC.
W252BY	252 D	FX 98.3 MHz	LIC	SEYMOUR	INBLFT-20080219AAT	155980	0.1 kW		10.6 m	190. m	13. m	N 38 57 29.1	W 85 53 22.9	112.27 km	69.76 mi	262.94°	COMM. RADIO FOR HOOSIERS
WZZY	252 A	FM 98.3 MHz	LIC	WINCHESTER	INBLH-19840716CZ	71415	3. kW		91. m	444. m	85. m	N 40 5 23.1	W 84 56 12.8	114.73 km	71.29 mi	345.74°	RODGERS BROADCASTING CORP.
WKET	252 D	FM 98.3 MHz	LIC	KETTERING	OHBLD-19851218KD	34301	0.013 kW		76. m	341. m	43. m	N 39 41 46.2	W 84 9 42.7	77.44 km	48.12 mi	29.24°	KETTERING CITY SCHOOL DIS.
WHUM-LP	253 LP1	FL 98.5 MHz	LIC	COLUMBUS	INBL-20040528AVS	124012	0.1 kW		13. m	212. m	20. m	N 39 12 38.1	W 85 55 6.9	114.42 km	71.10 mi	277.22°	COLUMBUS COMM. RADIO CORP.
WSHI-LP	253 LP1	FL 98.5 MHz	LIC	SHELBYVILLE	INBL-20140131AHM	124813	0.1 kW		29.3 m	259. m	30. m	N 39 27 11.1	W 85 48 0.9	110.85 km	68.88 mi	291.85°	SHELBYVILLE S.D.A.BR. SVS.
W253BK	253 D	FX 98.5 MHz	LIC	WINCHESTER	KYBLFT-20141031AAB	148885	0.25 kW	DA	0. m	439. m	113. m	N 38 2 6.3	W 84 27 1.8	117.75 km	73.16 mi	173.45°	RADIO BY GRACE, INC.
WRRM	253 B	FM 98.5 MHz	LIC	CINCINNATI	OHBMHL-20150721ABF	3142	18. kW		246. m	462. m	240. m	N 39 7 19.2	W 84 32 51.8	6.11 km	3.80 mi	52.93°	RADIO LICENSE HOLDING SRC
WRRM	253 B	FS 98.5 MHz	LIC	CINCINNATI	OHBLH-19991012ABG	3142	7.2 kW		230. m	450. m	177. m	N 39 12 1.2	W 84 31 21.8	14.23 km	8.84 mi	29.53°	RADIO LICENSE HOLDING SRC
W254BA	254 D	FX 98.7 MHz	LIC	DAYTON	OHBLFT-20141110AAU	138879	0.25 kW	DA	0. m	351. m	95. m	N 39 49 32.5	W 84 8 59.0	90.67 km	56.34 mi	25.32°	BRADLEE J. BEER
W254BJ	254 D	FX 98.7 MHz	LIC	SPRINGFIELD	OHBLFT-20161117AAI	145937	0.01 kW		0. m	403. m	80. m	N 39 57 42.0	W 83 52 5.0	115.74 km	71.92 mi	32.81°	SPIRIT COMMUNICATIONS

*** 20 FM Records within 120.00 km distance of 39° 5' 20.10" N, 84° 36 ' 15.10" W ***