

**OCTOBER 18, 2019**

**WRIZ-LP – Pompano Beach, FL - Facility ID# 195477**

**Modification - 100 w ERP**

Coordinates: 26 16 13 N, 80 07 03 W (NAD 83)  
AGL: 10.9 meters  
Elevation: 6.4 meters  
COR AMSL: 17.3 meters  
HAAT: 17 meters

**Second Adjacent Exhibit & Waiver Request**

Minor modification requests second adjacent waiver. Exhibit is provided demonstrating no interference will be caused to any population.

The attached D/U Ratio Study calculates WHYI-FM with signal strength of 86.4 dBuV/m, and WLYF at 84.3 dBuV/m. With an additional 40 dBu, WLYF is protected to 124.3 dBuV/m. The full data export of engineering parameters are attached with this exhibit.

Height of radiation center will be 10.9 meters above ground level.

At 100 watts ERP, worst-case interference is calculated to 5.9 meters radius at 2.5 meters above ground.

Interference will remain cleared of occupied areas and four-laned roadways. No population will be subject to interference from the proposed station according to the undesired-to-desired ratio method.

Export of engineering parameters are attached.

Export of calculations from Engineering Study  
V-Soft Probe 4 software

WLYF signal calculations at reference point:

Point Information Report

Latitude: 26-16-11.7 N

Longitude: 080-07-03.8 W

Signal Strength: 84.3 dBuV/m

Elevation: 0.0 m

Distance From Transmitter: 34.89 km

Azimuth From Transmitter: 16 degrees

Call Letters: WLYF

File Number: BLH20090828ADS

Latitude: 25-58-00 N

Longitude: 080-12-42.80 W

ERP: 100.00 kW

Channel: 268

Frequency: 101.5 MHz

AMSL Height: 250.2 m

Elevation: 2.1 m

Horiz. Antenna Pattern: Omni

Vert. Elevation Pattern: No

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Point Information Report

Latitude: 26-16-11.7 N

Longitude: 080-07-03.8 W

Signal Strength: 86.3 dBuV/m

Elevation: 0.0 m

Distance From Transmitter: 34.76 km

Azimuth From Transmitter: 15 degrees

Call Letters: WHYI-FM

File Number: BLH20050225AAQ

Latitude: 25-58-02 N

Longitude: 080-12-34 W

ERP: 100.00 kW

Channel: 264

Frequency: 100.7 MHz

AMSL Height: 308.0 m

Elevation: 2.0 m

Horiz. Antenna Pattern: Directional

Vert. Elevation Pattern: No

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## Study Information:

### D/U Ratio Study

Signal Resolution: 0.5 km

Study Date: 10/16/2019

Land Cover was not considered in this study.

Primary Terrain: V-Soft 30 Second US Database

Secondary Terrain: V-Soft 3 Second Alaska Terrain

Coordinate System: NAD27

## Transmitters:

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### Transmitter Information:

Call Letters: WRIZ-LP

File Number: BLL20180423AAN

Latitude: 26-16-11.7 N

Longitude: 080-07-03.8 W

ERP: 0.1 kW

Channel: 266

Frequency: 101.1 MHz

AMSL Height: 17.3 m

Elevation: 6.4 m

Horiz. Antenna Pattern: Omni

Vert. Elevation Pattern: No

Propagation Model: Longley-Rice

Climate: Continental temperate

Conductivity: 0.0050

Dielectric Constant: 15.0

Refractivity: 311.0

Receiver Height AG: 9.1 m

Receiver Gain: 0 dB

Time Variability: 50.0%

Situation Variability: 50.0%

ITM Mode: Broadcast

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### Transmitter Information:

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Transmitter Information:

Call Letters: WHYI-FM  
File Number: BLH20050225AAQ  
Latitude: 25-58-02 N  
Longitude: 080-12-34 W  
ERP: 100.00 kW  
Channel: 264  
Frequency: 100.7 MHz  
AMSL Height: 308.0 m  
Elevation: 2.0 m  
Horiz. Antenna Pattern: Directional  
Vert. Elevation Pattern: No  
Propagation Model: Longley-Rice  
Climate: Continental temperate  
Conductivity: 0.0050  
Dielectric Constant: 15.0  
Refractivity: 311.0  
Receiver Height AG: 9.1 m  
Receiver Gain: 0 dB  
Time Variability: 10.0%  
Situation Variability: 50.0%  
ITM Mode: Broadcast  
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Transmitter Information:

Call Letters: WLYF  
File Number: BLH20090828ADS  
Latitude: 25-58-00 N  
Longitude: 080-12-42.80 W  
ERP: 100.00 kW  
Channel: 268  
Frequency: 101.5 MHz  
AMSL Height: 250.2 m  
Elevation: 2.1 m  
Horiz. Antenna Pattern: Omni  
Vert. Elevation Pattern: No  
Propagation Model: Longley-Rice  
Climate: Continental temperate  
Conductivity: 0.0050  
Dielectric Constant: 15.0  
Refractivity: 311.0  
Receiver Height AG: 9.1 m  
Receiver Gain: 0 dB  
Time Variability: 10.0%  
Situation Variability: 50.0%  
ITM Mode: Broadcast  
-----

## Depression Angle Calculations

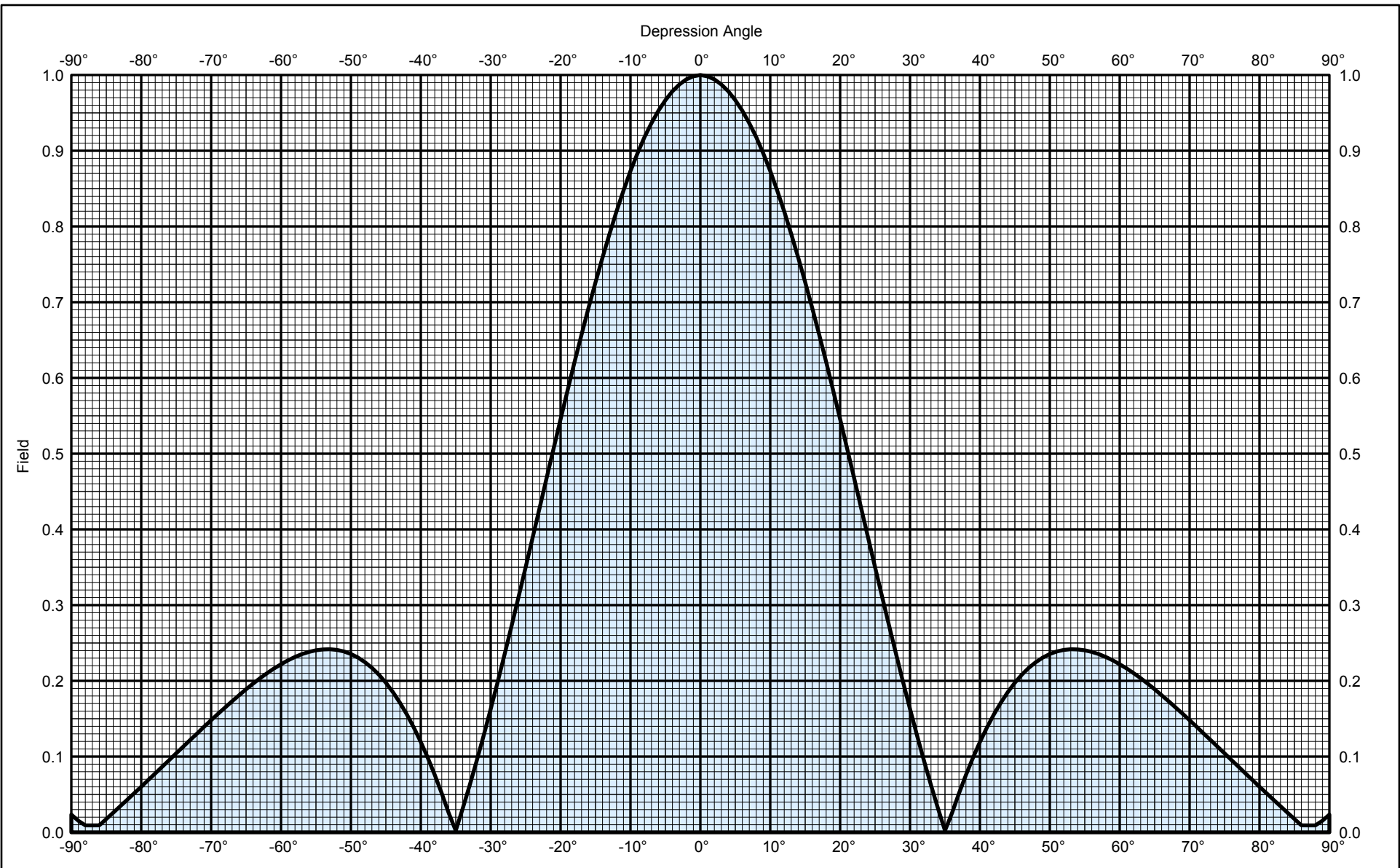
Two-bay dipole antenna

ERP: 100 watts

AGL: 10.9 meters

Interfering contour: 124.3

relative field	db from relative	ERP	angular distance to contour	vertical distance	horizontal distance	clearance above ground
1.000	0.00	100.00	42.729	0.000	42.729	10.900
0.967	-0.29	93.51	41.318	3.601	41.161	7.299
0.873	-1.18	76.21	37.302	6.477	36.735	4.423
0.726	-2.78	52.71	31.021	8.029	29.964	2.871
0.545	-5.27	29.70	23.287	7.965	21.883	2.935
0.350	-9.12	12.25	14.955	6.320	13.554	4.580
0.163	-15.76	2.66	6.965	3.482	6.032	7.418
0.010	-40.00	0.01	0.427	0.245	0.350	10.655
0.119	-18.49	1.42	5.085	3.268	3.895	7.632
0.198	-14.07	3.92	8.460	5.982	5.982	4.918
0.235	-12.58	5.52	10.041	7.692	6.454	3.208
0.240	-12.40	5.76	10.255	8.400	5.882	2.500
0.222	-13.07	4.93	9.486	8.215	4.743	2.685
0.189	-14.47	3.57	8.076	7.319	3.413	3.581
0.148	-16.59	2.19	6.324	5.942	2.163	4.958
0.104	-19.66	1.08	4.444	4.292	1.150	6.608
0.060	-24.44	0.36	2.564	2.525	0.445	8.375
0.018	-34.89	0.03	0.769	0.766	0.067	10.134
0.023	-32.77	0.05	0.983	0.983	0.000	9.917





**KATHREIN**  
**SCALA DIVISION**

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FMV-2 Dipole array  
FM  
Maximum gain: 3.5 dBd  
Vertical polarization

Vertical radiation pattern  
0 degree electrical downtilt



FMV-2 Dipole array

FM

Maximum gain: 3.5 dBd

Vertical polarization

Vertical radiation pattern

0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
-90	0.023	-32.64	-29.14	0.00	-45	0.198	-14.09	-10.59	0.09
-89	0.015	-36.31	-32.81	0.00	-44	0.185	-14.64	-11.14	0.08
-88	0.010	-40.00	-36.50	0.00	-43	0.171	-15.32	-11.82	0.07
-87	0.010	-40.00	-36.50	0.00	-42	0.156	-16.15	-12.65	0.05
-86	0.010	-40.00	-36.50	0.00	-41	0.138	-17.18	-13.68	0.04
-85	0.018	-35.09	-31.59	0.00	-40	0.119	-18.47	-14.97	0.03
-84	0.026	-31.71	-28.21	0.00	-39	0.098	-20.14	-16.64	0.02
-83	0.035	-29.24	-25.74	0.00	-38	0.076	-22.41	-18.91	0.01
-82	0.043	-27.33	-23.83	0.00	-37	0.051	-25.78	-22.28	0.01
-81	0.052	-25.74	-22.24	0.01	-36	0.025	-31.91	-28.41	0.00
-80	0.060	-24.40	-20.90	0.01	-35	0.010	-40.00	-36.50	0.00
-79	0.069	-23.22	-19.72	0.01	-34	0.032	-30.02	-26.52	0.00
-78	0.078	-22.19	-18.69	0.01	-33	0.062	-24.11	-20.61	0.01
-77	0.087	-21.25	-17.75	0.02	-32	0.094	-20.49	-16.99	0.02
-76	0.095	-20.42	-16.92	0.02	-31	0.128	-17.86	-14.36	0.04
-75	0.104	-19.64	-16.14	0.02	-30	0.163	-15.77	-12.27	0.06
-74	0.113	-18.93	-15.43	0.03	-29	0.199	-14.04	-10.54	0.09
-73	0.122	-18.28	-14.78	0.03	-28	0.235	-12.56	-9.06	0.12
-72	0.131	-17.68	-14.18	0.04	-27	0.273	-11.28	-7.78	0.17
-71	0.139	-17.11	-13.61	0.04	-26	0.311	-10.14	-6.64	0.22
-70	0.148	-16.59	-13.09	0.05	-25	0.350	-9.12	-5.62	0.27
-69	0.157	-16.11	-12.61	0.05	-24	0.389	-8.20	-4.70	0.34
-68	0.165	-15.66	-12.16	0.06	-23	0.428	-7.36	-3.86	0.41
-67	0.173	-15.23	-11.73	0.07	-22	0.468	-6.60	-3.10	0.49
-66	0.181	-14.85	-11.35	0.07	-21	0.507	-5.91	-2.41	0.57
-65	0.189	-14.47	-10.97	0.08	-20	0.545	-5.26	-1.76	0.67
-64	0.196	-14.14	-10.64	0.09	-19	0.584	-4.68	-1.18	0.76
-63	0.204	-13.83	-10.33	0.09	-18	0.621	-4.14	-0.64	0.86
-62	0.210	-13.55	-10.05	0.10	-17	0.657	-3.65	-0.15	0.97
-61	0.216	-13.30	-9.80	0.10	-16	0.693	-3.19	0.31	1.07
-60	0.222	-13.08	-9.58	0.11	-15	0.726	-2.78	0.72	1.18
-59	0.227	-12.87	-9.37	0.12	-14	0.759	-2.40	1.10	1.29
-58	0.232	-12.71	-9.21	0.12	-13	0.790	-2.05	1.45	1.40
-57	0.235	-12.57	-9.07	0.12	-12	0.820	-1.73	1.77	1.50
-56	0.238	-12.46	-8.96	0.13	-11	0.847	-1.44	2.06	1.61
-55	0.240	-12.38	-8.88	0.13	-10	0.873	-1.18	2.32	1.71
-54	0.241	-12.34	-8.84	0.13	-9	0.896	-0.95	2.55	1.80
-53	0.242	-12.33	-8.83	0.13	-8	0.918	-0.74	2.76	1.89
-52	0.241	-12.37	-8.87	0.13	-7	0.936	-0.57	2.93	1.96
-51	0.239	-12.44	-8.94	0.13	-6	0.953	-0.42	3.08	2.03
-50	0.235	-12.56	-9.06	0.12	-5	0.967	-0.29	3.21	2.09
-49	0.231	-12.74	-9.24	0.12	-4	0.978	-0.19	3.31	2.14
-48	0.225	-12.97	-9.47	0.11	-3	0.988	-0.11	3.39	2.18
-47	0.217	-13.26	-9.76	0.11	-2	0.994	-0.05	3.45	2.21
-46	0.208	-13.63	-10.13	0.10	-1	0.998	-0.01	3.49	2.23
					0	1.000	0.00	3.50	2.24



FMV-2 Dipole array

FM

Maximum gain: 3.5 dBd

Vertical polarization

Vertical radiation pattern

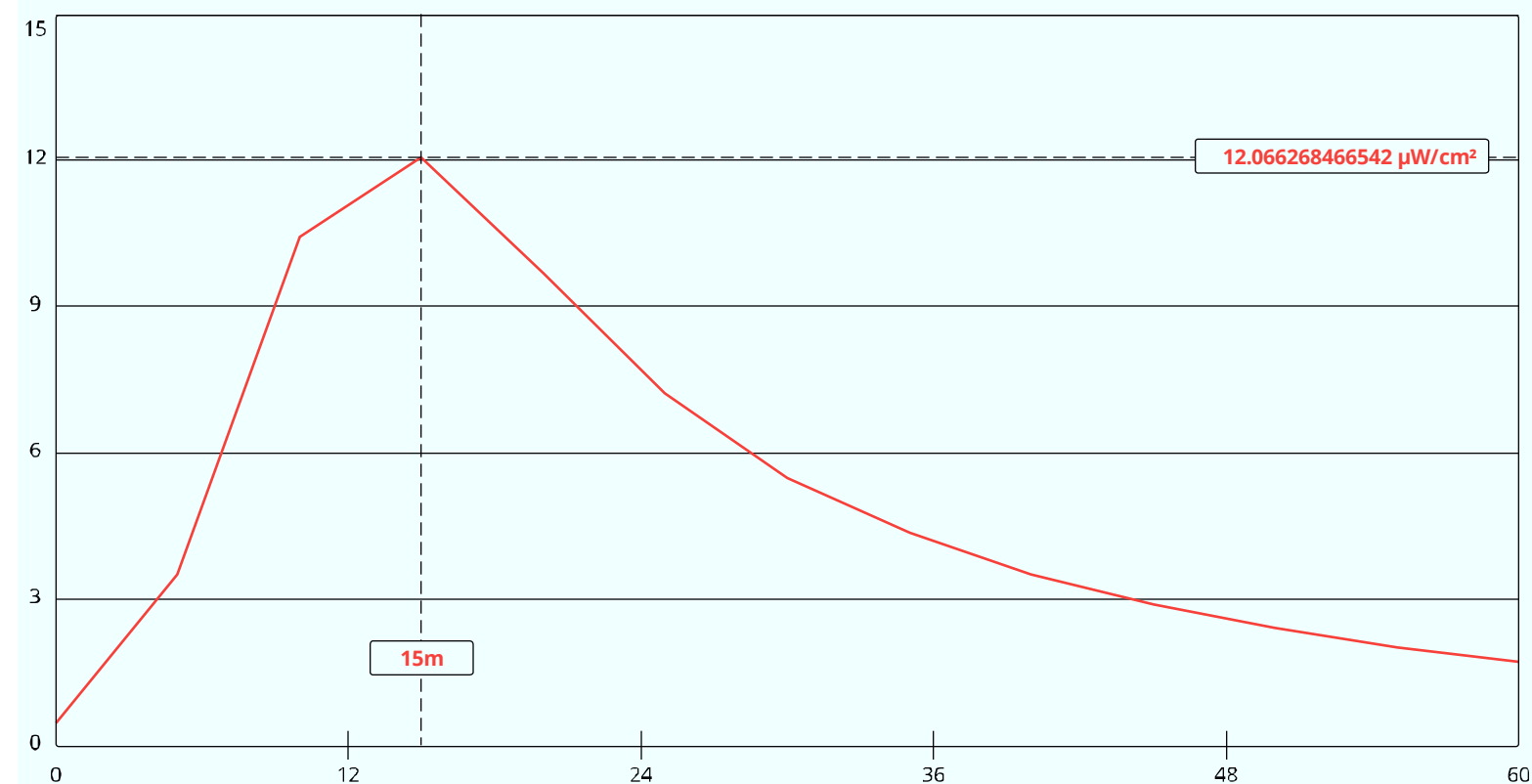
0 degree electrical downtilt

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	1.000	0.00	3.50	2.24	45	0.198	-14.09	-10.59	0.09
1	0.998	-0.01	3.49	2.23	46	0.208	-13.63	-10.13	0.10
2	0.994	-0.05	3.45	2.21	47	0.217	-13.26	-9.76	0.11
3	0.988	-0.11	3.39	2.18	48	0.225	-12.97	-9.47	0.11
4	0.978	-0.19	3.31	2.14	49	0.231	-12.74	-9.24	0.12
5	0.967	-0.29	3.21	2.09	50	0.235	-12.56	-9.06	0.12
6	0.953	-0.42	3.08	2.03	51	0.239	-12.44	-8.94	0.13
7	0.936	-0.57	2.93	1.96	52	0.241	-12.37	-8.87	0.13
8	0.918	-0.74	2.76	1.89	53	0.242	-12.33	-8.83	0.13
9	0.896	-0.95	2.55	1.80	54	0.241	-12.34	-8.84	0.13
10	0.873	-1.18	2.32	1.71	55	0.240	-12.38	-8.88	0.13
11	0.847	-1.44	2.06	1.61	56	0.238	-12.46	-8.96	0.13
12	0.820	-1.73	1.77	1.50	57	0.235	-12.57	-9.07	0.12
13	0.790	-2.05	1.45	1.40	58	0.232	-12.71	-9.21	0.12
14	0.759	-2.40	1.10	1.29	59	0.227	-12.87	-9.37	0.12
15	0.726	-2.78	0.72	1.18	60	0.222	-13.08	-9.58	0.11
16	0.693	-3.19	0.31	1.07	61	0.216	-13.30	-9.80	0.10
17	0.657	-3.65	-0.15	0.97	62	0.210	-13.55	-10.05	0.10
18	0.621	-4.14	-0.64	0.86	63	0.204	-13.83	-10.33	0.09
19	0.584	-4.68	-1.18	0.76	64	0.196	-14.14	-10.64	0.09
20	0.545	-5.26	-1.76	0.67	65	0.189	-14.47	-10.97	0.08
21	0.507	-5.91	-2.41	0.57	66	0.181	-14.85	-11.35	0.07
22	0.468	-6.60	-3.10	0.49	67	0.173	-15.23	-11.73	0.07
23	0.428	-7.36	-3.86	0.41	68	0.165	-15.66	-12.16	0.06
24	0.389	-8.20	-4.70	0.34	69	0.157	-16.11	-12.61	0.05
25	0.350	-9.12	-5.62	0.27	70	0.148	-16.59	-13.09	0.05
26	0.311	-10.14	-6.64	0.22	71	0.139	-17.11	-13.61	0.04
27	0.273	-11.28	-7.78	0.17	72	0.131	-17.69	-14.19	0.04
28	0.235	-12.56	-9.06	0.12	73	0.122	-18.28	-14.78	0.03
29	0.199	-14.04	-10.54	0.09	74	0.113	-18.93	-15.43	0.03
30	0.163	-15.77	-12.27	0.06	75	0.104	-19.64	-16.14	0.02
31	0.128	-17.86	-14.36	0.04	76	0.095	-20.42	-16.92	0.02
32	0.095	-20.49	-16.99	0.02	77	0.087	-21.25	-17.75	0.02
33	0.062	-24.11	-20.61	0.01	78	0.078	-22.19	-18.69	0.01
34	0.032	-30.02	-26.52	0.00	79	0.069	-23.22	-19.72	0.01
35	0.010	-40.00	-36.50	0.00	80	0.060	-24.40	-20.90	0.01
36	0.025	-31.91	-28.41	0.00	81	0.052	-25.74	-22.24	0.01
37	0.051	-25.78	-22.28	0.01	82	0.043	-27.33	-23.83	0.00
38	0.076	-22.41	-18.91	0.01	83	0.035	-29.24	-25.74	0.00
39	0.098	-20.14	-16.64	0.02	84	0.026	-31.71	-28.21	0.00
40	0.119	-18.47	-14.97	0.03	85	0.018	-35.09	-31.59	0.00
41	0.138	-17.18	-13.68	0.04	86	0.010	-40.00	-36.50	0.00
42	0.156	-16.15	-12.65	0.05	87	0.010	-40.00	-36.50	0.00
43	0.171	-15.32	-11.82	0.07	88	0.010	-40.00	-36.50	0.00
44	0.185	-14.64	-11.14	0.08	89	0.015	-36.31	-32.81	0.00
					90	0.023	-32.64	-29.14	0.00



# FM Model

The FM Model calculator determines the potential exposure from radiofrequency (RF) electromagnetic fields produced by FM broadcast station antennas at ground level. The FM Model software was originally developed by the FCC in 1997 as a standalone executable program and this improved version provides more precise predictions and runs via a JavaScript enabled web browser. The FM Model is originally based on measured data [published in 1985 by the EPA](http://nepis.epa.gov/Exe/ZyNET.exe/2000ED2W.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1981+Thru+1985&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A\zyfiles\Index%20Data\81thru85\Txt\00000003\2000ED2W.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h|-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL) (<http://nepis.epa.gov/Exe/ZyNET.exe/2000ED2W.TXT?ZyActionD=ZyDocument&Client=EPA&Index=1981+Thru+1985&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A\zyfiles\Index%20Data\81thru85\Txt\00000003\2000ED2W.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h|-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=p|f&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=1&SeekPage=x&ZyPURL>). [▼ Show More.....](#)



Channel Selection	Channel 266 (101.1 MHz)		
Antenna Type +	EPA Type 1: Ring-and-Stub or "Other"		
Height (m)	<input type="text" value="10"/>	Distance (m)	<input type="text" value="60"/>
ERP-H (W)	<input type="text" value="100"/>	ERP-V (W)	<input type="text" value="100"/>
Num of Elements	<input type="text" value="2"/>	Element Spacing (λ)	<input type="text" value=".5"/>
Num of Points	<input type="text" value="12"/>	<input type="button" value="Apply"/>	

\* To Print - On your browser, please select Shrink to Fit under the Scale tab from Print Preview

Hide Tabular Results -

Distance (m)	Power Density (μW/cm²)
0	0.5
5	3.5
10	10.4
15	12.1
20	9.7
25	7.2
30	5.5
35	4.4
40	3.5
45	2.9
50	2.4
55	2.0
60	1.7

Go to the Top of the Page

**Bureau/Office:**  
[Engineering & Technology \(https://www.fcc.gov/engineering-technology\)](https://www.fcc.gov/engineering-technology)

**Updated:**  
Friday, June 8, 2018

## Antenna Height Above Average Terrain Calculations -- Results

### Input Data

Latitude **26° 16' 11.71" North**

Longitude **80° 7' 3.84" West (NAD 27)**

These coordinates convert to NAD 83 coordinates of  
26° 16' 13.00", North, 80° 07' 03.00" West (NAD 83).

Height of antenna radiation center above mean sea level: **17.3 meters** AMSL

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

### Results

Calculated HAAT = **17 meters**

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

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

0°	17.3 m
45°	17.3 m
90°	17.3 m
135°	17.3 m
180°	17.3 m
225°	17.3 m
270°	17.3 m
315°	17.3 m

Print Results?

New Calculation?

## Antenna Structure Registration

[FCC](#) > [WTB](#) > [ASR](#) > [Online Systems](#) > TOWAIR

[FCC Site Map](#)

### TOWAIR Determination Results

 [HELP](#)
 [New Search](#)
 [Printable Page](#)

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 - 2426.0 Meters (7959.22 Feet)away & below slope by 7.0 Meters (22.9699 Feet)**

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	26-15-2.00N	080-06-25.00W	POMPANO BEACH AIRPARK	BROWARD POMPANO BEACH, FL	3.2	1499.0

**PASS SLOPE(100:1)NO FAA REQ - 2709.0 Meters (8887.69 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	26-14-45.00N	080-07-0.00W	POMPANO BEACH AIRPARK	BROWARD POMPANO BEACH, FL	3.2	1499.0

**PASS SLOPE(100:1)NO FAA REQ - 1768.0 Meters (5800.44 Feet)away & below slope by 0.0 Meters (0.0 Feet)**

Type	C/R	Latitude	Longitude	Name	Address	Lowest Elevation (m)	Runway Length (m)
AIRP	R	26-15-16.00N	080-06-55.00W	POMPANO BEACH AIRPARK	BROWARD POMPANO BEACH, FL	3.2	1499.0

#### Your Specifications

##### NAD83 Coordinates

Latitude	26-16-13.0 north
Longitude	080-07-03.0 west

##### Measurements (Meters)

Overall Structure Height (AGL)	14.5
Support Structure Height (AGL)	0
Site Elevation (AMSL)	6.4

##### Structure Type

MAST - Mast

# Output from NADCON for station

North American Datum Conversion

NAD 27 to NAD 83

NADCON Program Version 2.11

=====

Transformation #: 1                      Region: Conus

Latitude

Longitude

NAD 27 datum values:                      26 16 11.71000

80 07 3.82000

NAD 83 datum values:                      26 16 13.00057

80 07 2.97906

NAD 83 - NAD 27 shift values:                      1.29057

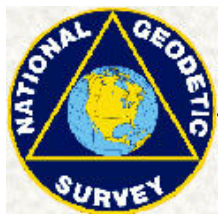
-0.84094 (secs.)

39.718

-23.333 (meters)

Magnitude of total shift:

46.065 (meters)



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