

WLAY-FM Minor Modification

This technical report is submitted for a minor modification to WLAY-FM 261A at Littleville, AL, FCC file no. BLH-20160812AAD. Changes in tower site, COR and ERP are submitted.

WLAY-FM Modification Analysis:

A spacing study in exhibit E-1 shows the WLAY-FM modification is short-spaced to WQRV(FM) 262C2 at Meridianville, AL, FCC facility I.D. 19456 at its new site, ASR 1053167, at coordinates:

34 40 38N 087 43 02W NAD83.

As a result, WLAY-FM will remain a 73.215(c) short spaced facility with respect to WQRV(FM). An overlap study, interference plot and FMOver tabulation WQRV(FM) are included in exhibits E-2 to E-4.

An ERI LPX-6C-HW-SP six bay, 0.5 wavelength-spaced nondirectional antenna will be mounted on the existing 128 meter tower, ASR 1053167, at a COR AGL of 116 meters, 375 meters AMSL, 190 meters HAAT (exhibit E-5) and will operate at 1.2 kW ERP. A 70 dBu contour plot is included in Exhibit E-6 and shows the contour covers the Littleville, AL community of license.

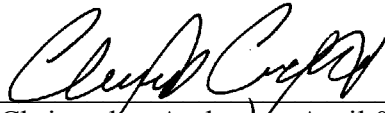
RF Exposure Calculation:

The RF contribution of the WLAY-FM modification was calculated using the FMModel program (exhibit E-7). The resulting value is $0.037 \mu\text{W}/\text{cm}^2$ at a distance of 80.4 meters from the base of the tower. The co-located and combined WVNA-FM modified facility has an RF value of $0.049 \mu\text{W}/\text{cm}^2$ at a distance of 80.4 meters. The

combined RF is $0.086 \mu\text{W}/\text{cm}^2$ at a distance of 80.4 meters, which is below 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 WLAY-FM is in full compliance with the Commission rules and policies.



Christopher Anderson April 04, 2020
andersce@bham.rr.com
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E-1 WLAY-FM 261A Mod. Spacing Study

REFERENCE		DISPLAY DATES
34 40 38.00 N.	CLASS = A	DATA 04-03-20
87 43 02.00 W.	Current Spacings to 3rd Adj.	SEARCH 04-03-20
----- Channel 261 - 100.1 MHz -----		

Call	Channel	Location		Azi	Dist	FCC	Margin
WLAY-FM	LIC-N 261A	Littleville	AL	133.1	0.48	114.5	-114.0
WQRV	LIC-N 262C2	Meridianville	AL	82.3	100.32	105.5	-5.2 (1)
WYDL	LIC 262C3	Middleton	TN	293.1	93.60	88.5	5.1
WRJL-FM	LIC 260C3	Eva	AL	113.9	99.17	88.5	10.7
WSMS	LIC 260C2	Artesia	MS	216.4	140.80	105.5	35.3
WWON-FM	LIC 264A	Waynesboro	TN	357.9	70.06	30.5	39.6

Reference station has protected zone issue: AM tower
All separation margins include rounding

(1) WLAY-FM will remain a 73.215(c) short-spaced facility with respect to WQRV(FM) 262C2.

E-2 WLAY-FM 261A Mod. Overlap Study

REFERENCE	CH# 261A - 100.1 MHz, Pwr= 1.2 kW, HAAT= 190.0 M, COR= 375 M	DISPLAY DATES
34 40 38.00 N.	Average Protected F(50-50)= 26.14 km	DATA 04-04-20
87 43 02.00 W.	73.215 Omni-directional	SEARCH 04-04-20

CH CITY	CALL	TYPE	ANT STATE	AZI ---	DIST FILE #	LAT LNG	PWR(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap)	*OUT* (in km)
261A Litleville	WLAY-FM	LIC N__	AL__	133.1 313.1	0.48 BLH20160812AAD	34 40 27.30 87 42 48.10	2.900 114		---Reference---		
262C2 Meridianville	WQRV	LIC N__	AL__	82.3 262.9	100.09 BLH20060413ACK	34 47 36.30 86 37 51.00	8.500 299	71.9 532	48.7 Ihm Licenses, LLC	0.6	9.7
262C3 Middleten	WYDL«	LIC ____	TN__	293.1 112.6	93.60 BLH20111007ABB	35 00 13.30 88 39 39.20	25.000 100	58.6 238	37.7 Flinn Broadcasting Corpora	88.5R	5.1M
260C3 Eva	WRJL-FM«	LIC ____	AL__	113.9 294.5	99.17 BLH20090121ACG	34 18 43.30 86 43 53.90	25.000 97	60.4 362	39.3 Roj o, Inc.	88.5R	10.7M
260C2 Artesia	WSMS«	LIC ____	MS__	216.4 35.9	140.80 BLH19960730KC	33 39 14.40 88 37 15.20	47.000 154	75.7 219	50.2 Cumulus Li censi ng LLC	105.5R	35.3M
264A Waynesboro	WWON-FM«	LIC ____	TN__	357.9 177.9	70.06 BLH20151028AEC	35 18 30.20 87 44 42.00	6.000 94	2.1 340	20.9 Jukebox Medi a LLC	30.5R	39.6M

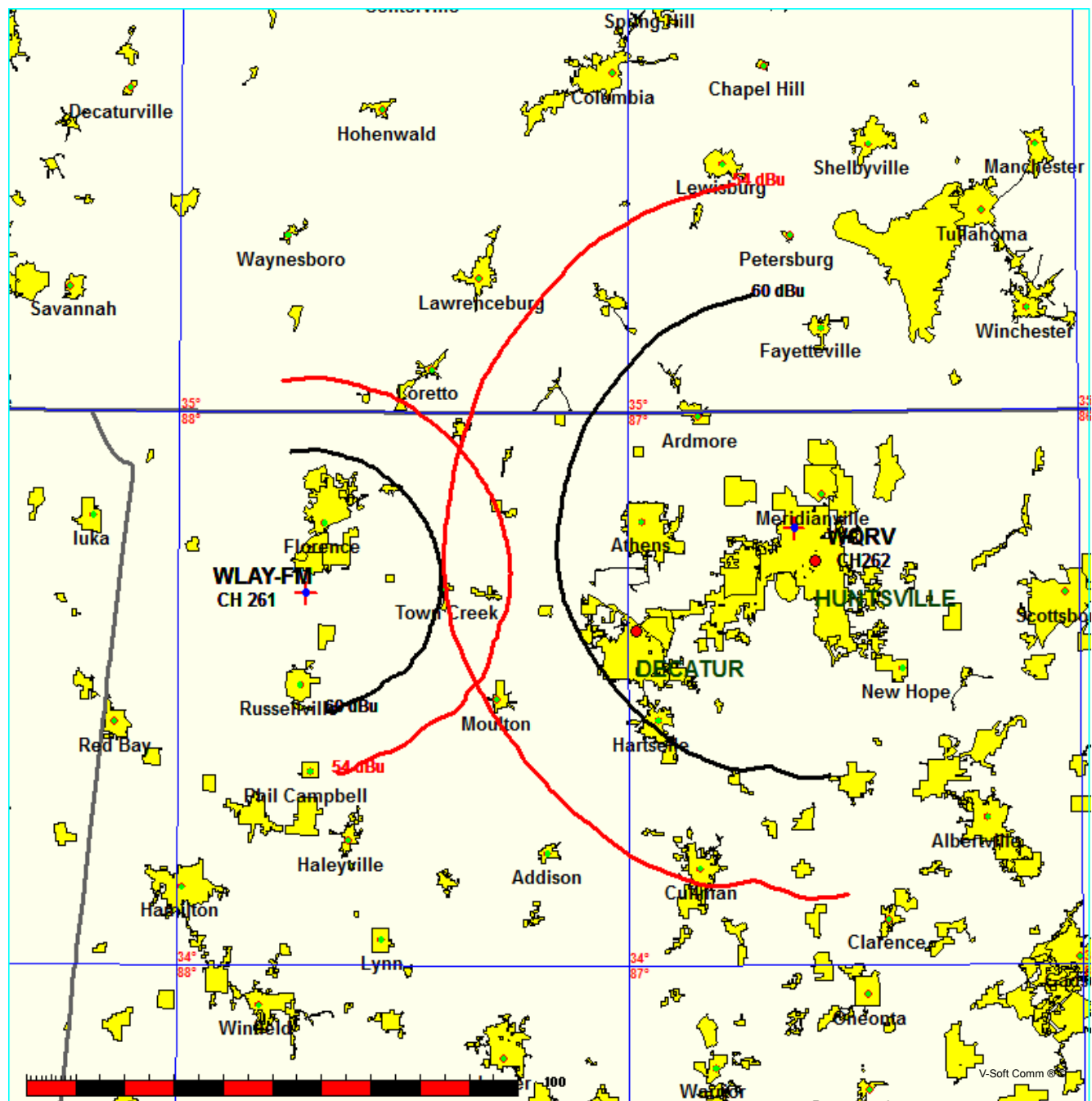
Terrain database is GLOBE 30 Sec , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
 Contour distances are on direct line to and from reference station. Reference zone= - Zone 2, Co to 3rd adjacent.
 All separation margins (if shown) include rounding.
 Ant Column: (D= DA Standard, 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
 Reference station has protected zone issue: AM tower

E-3 WLAY-FM 261A Mod. Interference Plot to WQRV(FM) 262C2

FMCommander Single Allocation Study - 04-04-2020 - GLOBE 30 Sec
WLAY-FM's Overlaps (In= 0.57 km, Out= 9.66 km)

WLAY-FM CH 261 A 73.215 N
Lat= 34 40 38.00, Lng= 87 43 02.00
1.2 kW 190 m HAAT, 375 m COR
Prot.= 60 dBu, Intef.= 54 dBu

WQRV CH 262 C2 73.215 N BLH20060413ACK
Lat= 34 47 36.30, Lng= 86 37 51.00
8.5 kW 299 m HAAT, 532 m COR
Prot.= 60 dBu, Intef.= 54 dBu



E-4 WLAY-FM 261A Mod. FMOver Tabulation From WQRV(FM) 262C2

04-04-2020 Terrain Data: GLOBE 30 Sec FMOver Analysis

WLAY-FM

Channel = 261A
Max ERP = 1.2 kW
RCAMSL = 375 m
N. Lat. 34 40 38.00
W. Lng. 87 43 02.00
Protected
60 dBu

WQRV BLH20060413ACK

Channel = 262C2
Max ERP = 8.5 kW
RCAMSL = 532 m
N. Lat. 34 47 36.30
W. Lng. 86 37 51.00
Interfering
54 dBu

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
022.0	001.2000	0224.0	028.3	278.8	008.5000	0281.9	089.5	47.58	
023.0	001.2000	0224.5	028.3	278.8	008.5000	0281.9	089.0	47.74	
024.0	001.2000	0224.1	028.3	278.7	008.5000	0282.0	088.6	47.89	
025.0	001.2000	0223.3	028.2	278.5	008.5000	0282.0	088.1	48.03	
026.0	001.2000	0222.8	028.2	278.4	008.5000	0282.1	087.6	48.18	
027.0	001.2000	0222.5	028.2	278.3	008.5000	0282.2	087.2	48.33	
028.0	001.2000	0222.4	028.2	278.2	008.5000	0282.3	086.7	48.48	
029.0	001.2000	0222.5	028.2	278.1	008.5000	0282.4	086.3	48.63	
030.0	001.2000	0222.7	028.2	278.0	008.5000	0282.5	085.8	48.78	
031.0	001.2000	0222.6	028.2	277.8	008.5000	0282.6	085.3	48.93	
032.0	001.2000	0221.5	028.1	277.7	008.5000	0282.8	084.9	49.07	
033.0	001.2000	0219.8	028.0	277.4	008.5000	0283.1	084.5	49.20	
034.0	001.2000	0218.8	028.0	277.3	008.5000	0283.3	084.1	49.34	
035.0	001.2000	0218.7	027.9	277.1	008.5000	0283.4	083.7	49.48	
036.0	001.2000	0219.1	028.0	276.9	008.5000	0283.6	083.3	49.63	
037.0	001.2000	0219.6	028.0	276.8	008.5000	0283.7	082.8	49.77	
038.0	001.2000	0219.8	028.0	276.6	008.5000	0283.8	082.4	49.91	
039.0	001.2000	0219.4	028.0	276.4	008.5000	0283.9	082.0	50.04	
040.0	001.2000	0219.0	028.0	276.2	008.5000	0284.0	081.6	50.17	
041.0	001.2000	0219.0	028.0	276.0	008.5000	0284.2	081.2	50.31	
042.0	001.2000	0219.2	028.0	275.8	008.5000	0284.3	080.8	50.44	
043.0	001.2000	0219.3	028.0	275.6	008.5000	0284.3	080.4	50.57	
044.0	001.2000	0219.1	028.0	275.4	008.5000	0284.4	080.0	50.70	
045.0	001.2000	0219.0	028.0	275.2	008.5000	0284.5	079.7	50.82	
046.0	001.2000	0219.0	028.0	274.9	008.5000	0284.5	079.3	50.94	
047.0	001.2000	0219.1	028.0	274.7	008.5000	0284.6	078.9	51.07	
048.0	001.2000	0219.0	028.0	274.5	008.5000	0284.7	078.6	51.18	
049.0	001.2000	0218.8	028.0	274.2	008.5000	0284.9	078.2	51.30	
050.0	001.2000	0218.8	028.0	273.9	008.5000	0285.1	077.9	51.42	
051.0	001.2000	0218.8	028.0	273.7	008.5000	0285.4	077.6	51.54	
052.0	001.2000	0218.6	027.9	273.4	008.5000	0285.6	077.3	51.65	
053.0	001.2000	0218.3	027.9	273.1	008.5000	0285.9	077.0	51.76	
054.0	001.2000	0217.8	027.9	272.8	008.5000	0286.3	076.7	51.87	
055.0	001.2000	0217.4	027.9	272.5	008.5000	0286.7	076.4	51.97	
056.0	001.2000	0217.2	027.9	272.2	008.5000	0287.1	076.1	52.08	
057.0	001.2000	0217.3	027.9	271.9	008.5000	0287.6	075.8	52.19	
058.0	001.2000	0217.6	027.9	271.6	008.5000	0288.1	075.6	52.30	
059.0	001.2000	0217.8	027.9	271.3	008.5000	0288.7	075.3	52.41	
060.0	001.2000	0217.8	027.9	271.0	008.5000	0289.4	075.0	52.52	
061.0	001.2000	0217.8	027.9	270.7	008.5000	0289.9	074.8	52.62	
062.0	001.2000	0217.7	027.9	270.3	008.5000	0290.5	074.6	52.72	
063.0	001.2000	0217.8	027.9	270.0	008.5000	0291.1	074.3	52.81	
064.0	001.2000	0217.8	027.9	269.7	008.5000	0291.6	074.1	52.90	
065.0	001.2000	0217.6	027.9	269.3	008.5000	0292.2	073.9	52.99	
066.0	001.2000	0217.4	027.9	269.0	008.5000	0292.8	073.8	53.07	
067.0	001.2000	0217.1	027.8	268.6	008.5000	0293.4	073.6	53.15	
068.0	001.2000	0216.8	027.8	268.3	008.5000	0294.0	073.5	53.22	
069.0	001.2000	0216.5	027.8	267.9	008.5000	0294.6	073.3	53.29	
070.0	001.2000	0216.4	027.8	267.5	008.5000	0295.3	073.2	53.35	
071.0	001.2000	0216.2	027.8	267.2	008.5000	0296.0	073.0	53.42	
072.0	001.2000	0215.8	027.8	266.8	008.5000	0296.6	072.9	53.48	
073.0	001.2000	0215.3	027.7	266.4	008.5000	0297.2	072.9	53.52	
074.0	001.2000	0214.9	027.7	266.0	008.5000	0297.8	072.8	53.57	
075.0	001.2000	0214.7	027.7	265.7	008.5000	0298.3	072.7	53.61	
076.0	001.2000	0214.8	027.7	265.3	008.5000	0298.8	072.6	53.66	
077.0	001.2000	0215.0	027.7	264.9	008.5000	0299.3	072.5	53.70	
078.0	001.2000	0215.2	027.7	264.5	008.5000	0299.9	072.5	53.74	
079.0	001.2000	0215.0	027.7	264.1	008.5000	0300.4	072.4	53.77	
080.0	001.2000	0214.5	027.7	263.8	008.5000	0300.8	072.4	53.79	
081.0	001.2000	0214.1	027.7	263.4	008.5000	0301.1	072.5	53.80	
082.0	001.2000	0213.8	027.6	263.0	008.5000	0301.4	072.5	53.80	
083.0	001.2000	0213.5	027.6	262.6	008.5000	0301.6	072.5	53.80	
084.0	001.2000	0213.1	027.6	262.2	008.5000	0301.8	072.5	53.79	
085.0	001.2000	0212.6	027.6	261.9	008.5000	0302.0	072.6	53.78	
086.0	001.2000	0211.9	027.5	261.5	008.5000	0302.2	072.7	53.76	
087.0	001.2000	0211.4	027.5	261.1	008.5000	0302.3	072.7	53.73	
088.0	001.2000	0210.9	027.4	260.7	008.5000	0302.6	072.8	53.71	
089.0	001.2000	0210.4	027.4	260.4	008.5000	0302.8	072.9	53.68	
090.0	001.2000	0209.6	027.4	260.0	008.5000	0303.0	073.1	53.64	
091.0	001.2000	0208.6	027.3	259.7	008.5000	0303.2	073.2	53.59	
092.0	001.2000	0207.7	027.2	259.3	008.5000	0303.4	073.4	53.54	
093.0	001.2000	0206.7	027.2	259.0	008.5000	0303.6	073.6	53.49	
094.0	001.2000	0205.7	027.1	258.6	008.5000	0303.8	073.7	53.43	
095.0	001.2000	0205.4	027.1	258.3	008.5000	0304.1	073.9	53.39	
096.0	001.2000	0205.1	027.1	257.9	008.5000	0304.3	074.1	53.34	
097.0	001.2000	0203.1	027.0	257.6	008.5000	0304.5	074.3	53.25	
098.0	001.2000	0199.9	026.8	257.3	008.5000	0304.8	074.7	53.13	

E-4 WLAY-FM 261A Mod. FMOver Tabulation From WQRV(FM) 262C2, cont.

Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Azimuth (degrees)	ERP (kW)	HAAT (m)	Dist (km)	Actual (dBu)	IX (km)
099.0	001.2000	0196.4	026.5	257.1	008.5000	0305.0	075.1	53.01	
100.0	001.2000	0194.6	026.4	256.8	008.5000	0305.2	075.4	52.92	
101.0	001.2000	0195.3	026.5	256.4	008.5000	0305.4	075.5	52.88	
102.0	001.2000	0195.5	026.5	256.1	008.5000	0305.7	075.7	52.82	
103.0	001.2000	0195.3	026.5	255.8	008.5000	0305.9	075.9	52.75	
104.0	001.2000	0193.6	026.4	255.5	008.5000	0306.2	076.2	52.65	
105.0	001.2000	0192.0	026.3	255.3	008.5000	0306.4	076.5	52.56	
106.0	001.2000	0191.8	026.3	255.0	008.5000	0306.7	076.8	52.48	
107.0	001.2000	0192.2	026.3	254.7	008.5000	0307.0	077.0	52.42	
108.0	001.2000	0193.0	026.3	254.4	008.5000	0307.3	077.2	52.35	
109.0	001.2000	0193.6	026.4	254.1	008.5000	0307.5	077.5	52.28	
110.0	001.2000	0194.1	026.4	253.8	008.5000	0307.8	077.7	52.21	
111.0	001.2000	0194.6	026.4	253.5	008.5000	0308.0	078.0	52.13	
112.0	001.2000	0194.9	026.4	253.2	008.5000	0308.1	078.2	52.04	
113.0	001.2000	0195.3	026.5	253.0	008.5000	0308.2	078.5	51.95	
114.0	001.2000	0195.3	026.5	252.7	008.5000	0308.2	078.8	51.85	
115.0	001.2000	0195.4	026.5	252.5	008.5000	0308.2	079.1	51.74	
116.0	001.2000	0194.7	026.4	252.3	008.5000	0308.1	079.5	51.62	
117.0	001.2000	0193.1	026.3	252.1	008.5000	0308.0	079.9	51.49	
118.0	001.2000	0190.8	026.2	251.9	008.5000	0307.9	080.3	51.35	
119.0	001.2000	0188.1	026.0	251.8	008.5000	0307.8	080.8	51.20	
120.0	001.2000	0185.5	025.9	251.7	008.5000	0307.7	081.2	51.05	
121.0	001.2000	0183.9	025.8	251.5	008.5000	0307.6	081.6	50.91	
122.0	001.2000	0184.0	025.8	251.3	008.5000	0307.4	081.9	50.80	
123.0	001.2000	0185.5	025.9	251.1	008.5000	0307.1	082.2	50.69	
124.0	001.2000	0187.3	026.0	250.8	008.5000	0306.8	082.5	50.59	
125.0	001.2000	0188.2	026.0	250.6	008.5000	0306.6	082.9	50.47	
126.0	001.2000	0187.9	026.0	250.4	008.5000	0306.4	083.3	50.34	
127.0	001.2000	0187.2	026.0	250.3	008.5000	0306.3	083.7	50.20	
128.0	001.2000	0185.8	025.9	250.2	008.5000	0306.1	084.1	50.06	
129.0	001.2000	0183.3	025.7	250.1	008.5000	0306.1	084.6	49.91	
130.0	001.2000	0179.5	025.5	250.1	008.5000	0306.0	085.1	49.75	
131.0	001.2000	0175.2	025.2	250.1	008.5000	0306.1	085.6	49.59	
132.0	001.2000	0171.7	025.0	250.1	008.5000	0306.1	086.1	49.43	
133.0	001.2000	0169.0	024.8	250.1	008.5000	0306.0	086.5	49.28	
134.0	001.2000	0166.8	024.7	250.0	008.5000	0306.0	087.0	49.13	
135.0	001.2000	0164.8	024.6	250.0	008.5000	0305.9	087.4	48.99	
136.0	001.2000	0163.1	024.5	249.9	008.5000	0305.9	087.9	48.85	
137.0	001.2000	0161.6	024.4	249.9	008.5000	0305.8	088.3	48.71	
138.0	001.2000	0160.9	024.3	249.8	008.5000	0305.8	088.7	48.58	
139.0	001.2000	0160.7	024.3	249.7	008.5000	0305.7	089.1	48.45	
140.0	001.2000	0160.9	024.3	249.6	008.5000	0305.6	089.5	48.32	
141.0	001.2000	0161.4	024.3	249.5	008.5000	0305.5	089.9	48.20	

E-5 WLAY-FM 261A Mod. HAAT Calculation

Antenna Height Above Average Terrain Calculations -- Results

Input Data

Latitude **34° 40' 38"** North
Longitude **87° 43' 2"** West (NAD 83)

Height of antenna radiation center above mean sea level: **375** meters AMSL

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

Results

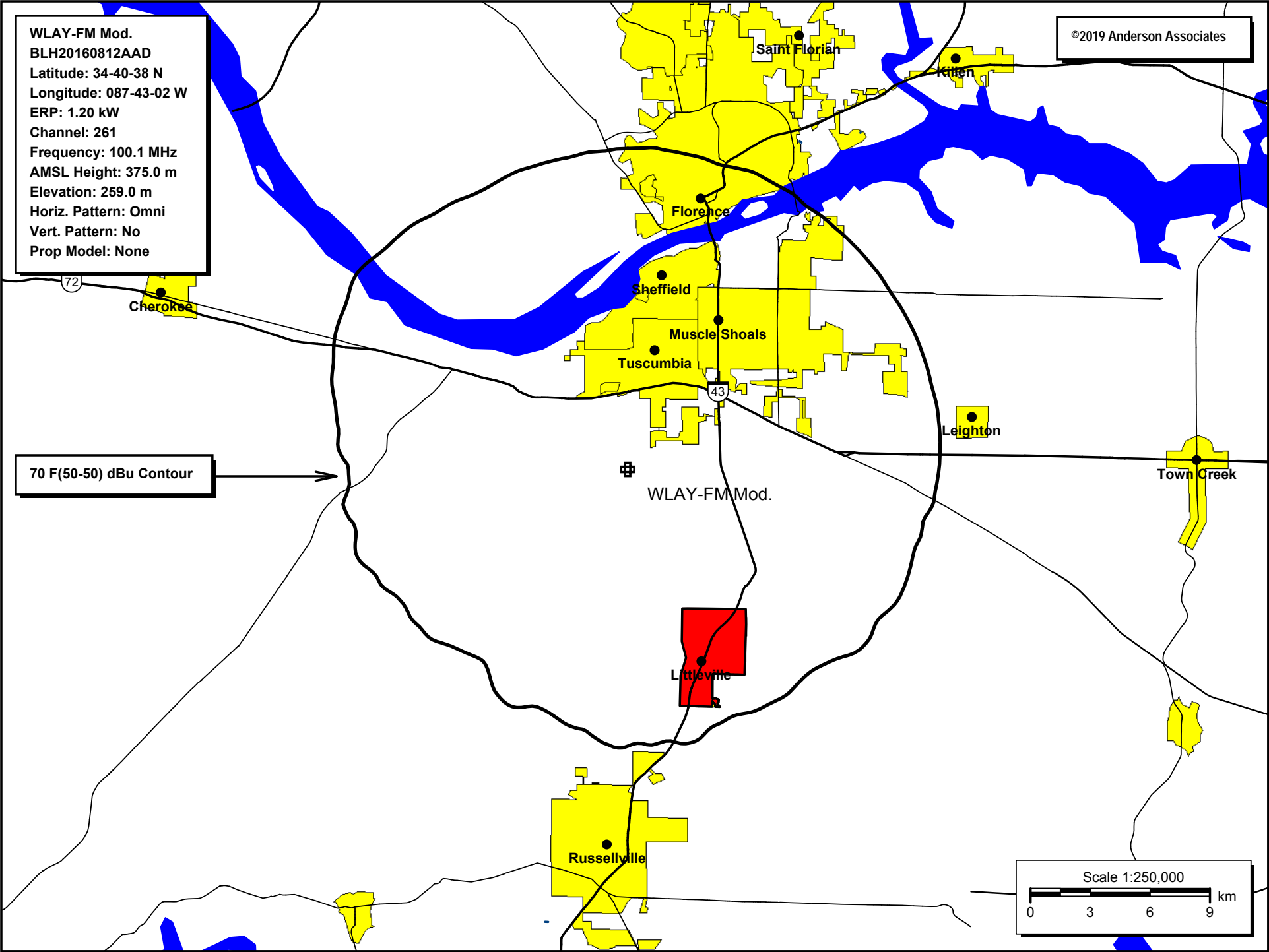
Calculated HAAT = **190 meters**

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

Individual "Radial HAAT" Values, in meters

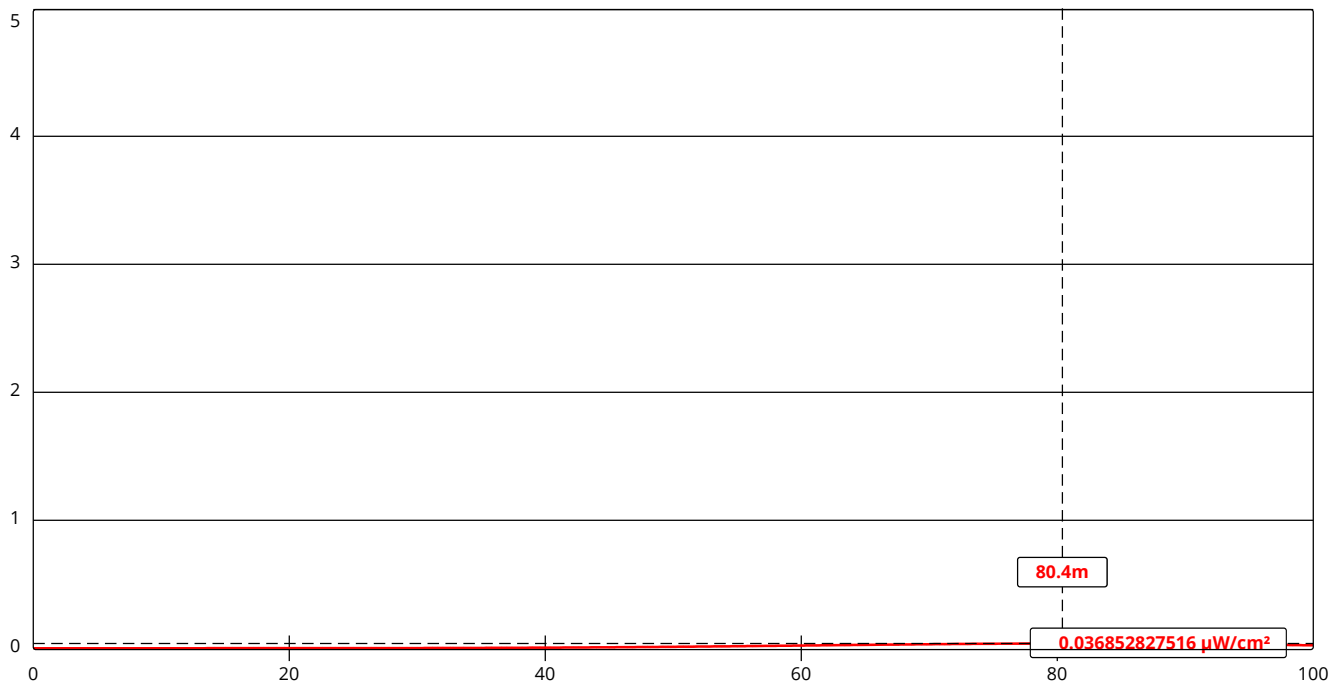
0°	222.3 m
45°	219.2 m
90°	209.7 m
135°	164.6 m
180°	166.6 m
225°	138.0 m
270°	169.3 m
315°	230.1 m

E-6 WLAY-FM 261A Mod. 70 dBu Contour Plot



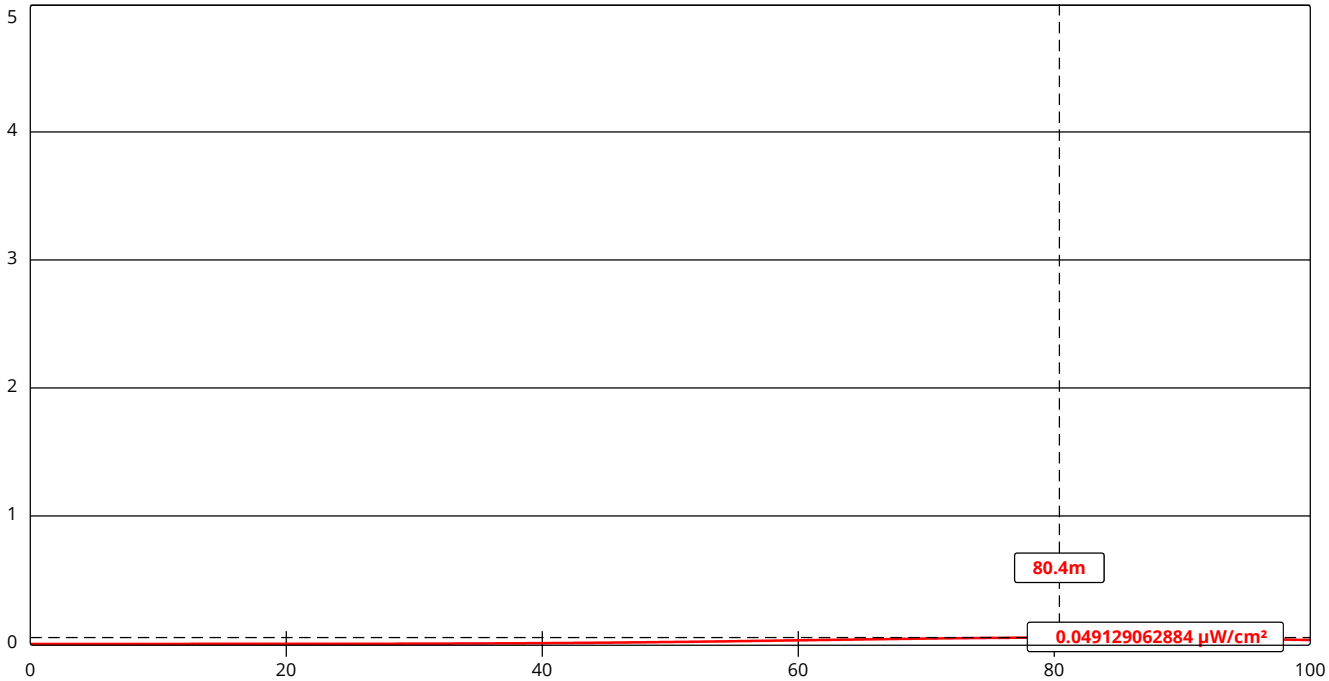
E-7 WLAY-FM 261A Mod. RF Calculation

FM Model



Channel Selection	Channel 261 (100.1 MHz)		
Antenna Type +	EPA Type 3: Opposed U Dipole		
Height (m)	116	Distance (m)	100
ERP-H (W)	1200	ERP-V (W)	1200
Num of Elements	6	Element Spacing (λ)	0.5
Num of Points	500		

FM Model



Channel Selection	Channel 288 (105.5 MHz)		
Antenna Type +	EPA Type 3: Opposed U Dipole		
Height (m)	116	Distance (m)	100
ERP-H (W)	1600	ERP-V (W)	1600
Num of Elements	6	Element Spacing (λ)	0.5
Num of Points	500		

ASR Registration 1053167

Registration Detail

Reg Number	1053167	Status	Constructed
File Number	A0908501	Constructed	01/01/1986
EMI	No	Dismantled	
NEPA	No		

Antenna Structure

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

Location (in NAD83 Coordinates)

Lat/Long	34-40-38.0 N 087-43-02.0 W	Address	PAMELA DR DOGWOOD SUBDIVISION
City, State	TUSCUMBIA , AL		
Zip	35674	County	COLBERT
Center of AM Array		Position of Tower in Array	

Heights (meters)

Elevation of Site Above Mean Sea Level	Overall Height Above Ground (AGL)
259.0	128.3
Overall Height Above Mean Sea Level	Overall Height Above Ground w/o Appurtenances
387.3	128.3

Painting and Lighting Specifications

FCC Paragraphs 1, 3, 12, 21

FAA Notification

FAA Study	86-ASO-2968-OE	FAA Issue Date	03/02/1987
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Owner & Contact Information

FRN	0003804416	Owner Entity	Corporation
		Type	

Owner

SHARP COMMUNICATION INC.
Attention To: JAMES PHILLIPS
3403 GOVERNORS DRIVE
HUNTSVILLE , AL 35805

P: (256)533-2484
F:
E: james@sharpcom.com

Contact

PHILLIPS , JAMES
Attention To: JAMES PHILLIPS
3403 GOVERNORS DRIVE
HUNTSVILLE , AL 35805

P: (256)533-2484
F:
E: james@sharpcom.com

Last Action Status

Status	Constructed	Received	07/02/2014
Purpose	Admin Update	Entered	07/02/2014