

**Engineering Statement
In Support of an
Application for a Construction Permit
WFXO(FM), Channel 290A, Southside, AL**

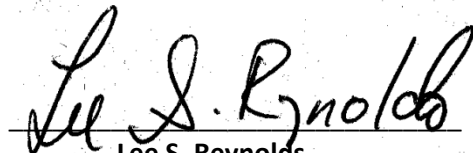
General

The engineering portion of the instant application for a construction permit is to demonstrate the technical viability of WFXO(FM)'s proposed move from Centre, Alabama on channel 290A (105.9 MHz) to Southside, Alabama on channel 290A. These engineering exhibits show that the proposed facility is within FCC rules and regulations. The proposed antenna will be placed on an existing tower (ASRN 1031305). Hence, no environmental impact study is required. The proposed facility will have an ERP of 1.6 kW (H&V) with a directional antenna. The directional antenna provides protection to WTAK-FM, channel 291C3, Hartselle, Alabama. Because WTAK is a §73.215 facility, its existing facility is protected and not the maximum facility for that class.

The proposed facility provides a new service to a net of 93,565 persons, while creating no white or gray areas inside the proposed loss area. Centre, Alabama will continue to be served by WEIS(AM), 990 kHz. The proposed allocation coordinates (33-53-32/85-58-18) are fully spaced to all other facilities and provides 70 dBu coverage to 100% of the proposed city of license (Southside, Alabama). WFXO will be the first local service to Southside, Alabama, a community with a population of 8,275 persons (US Census Bureau 2007 estimates).

Exhibit E, Figures 6 and 7 demonstrate that the proposed facility complies with the provisions in §73.315(a). The proposed F(50,50) 70 dBu contour encompasses 100% of Southside. Exhibit E, Figure 8 shows that the proposed directional antenna provides the necessary protection for WTAK-FM, in accordance with §73.215. Exhibit E, Figure 10 shows that the proposed facility exceeds the FCC's requirements for human exposure to radiofrequency radiation (both controlled and uncontrolled access to the site).

For the applicant:


Lee S. Reynolds

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WFXO Channel 290A at Southside, AL Allocation Study

REFERENCE		DISPLAY DATES
33 53 32.0 N.	CLASS = A	DATA 04-11-09
85 58 18.0 W.	Current Spacings to 3rd Adj.	SEARCH 04-29-09
----- Channel 290 - 105.9 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin		
WFXO	CP	290A	Centre	AL	61.1	31.60	115.0	-83.40
WFXO	LIC	290A	Centre	AL	27.9	39.16	115.0	-75.84

Of no concern:
Coordinates used by WFXO.

WTAK-FM	LIC-N	291C3	Hartselle	AL	315.9	88.52	89.0	-0.48
WHMA-FM	RSV	237A	Alexandria	AL	177.1	9.62	10.0	-0.38
WSTH-FM	LIC	291C1	Alexander City	AL	159.7	134.07	133.0	1.07
WRTR	LIC-Z	290C3	Brookwood	AL	243.0	158.14	142.0	16.14
WHMA-FM	APP-Z	237A	Alexandria	AL	165.7	30.34	10.0	20.34
WNRQ	LIC	290C	Nashville	TN	341.7	250.90	226.0	24.90
WVVB	LIC-Z	288C2	Hoover	AL	239.8	89.68	55.0	34.68
WWVA-FM	LIC	289C2	Canton	GA	81.7	141.55	106.0	35.55
WQAH-FM	LIC	289A	Addison	AL	294.7	111.50	72.0	39.50
WBZY	LIC-N	287C1	Bowdon	GA	116.5	118.57	75.0	43.57
WZHT	LIC-N	289C	Troy	AL	184.8	213.42	165.0	48.42

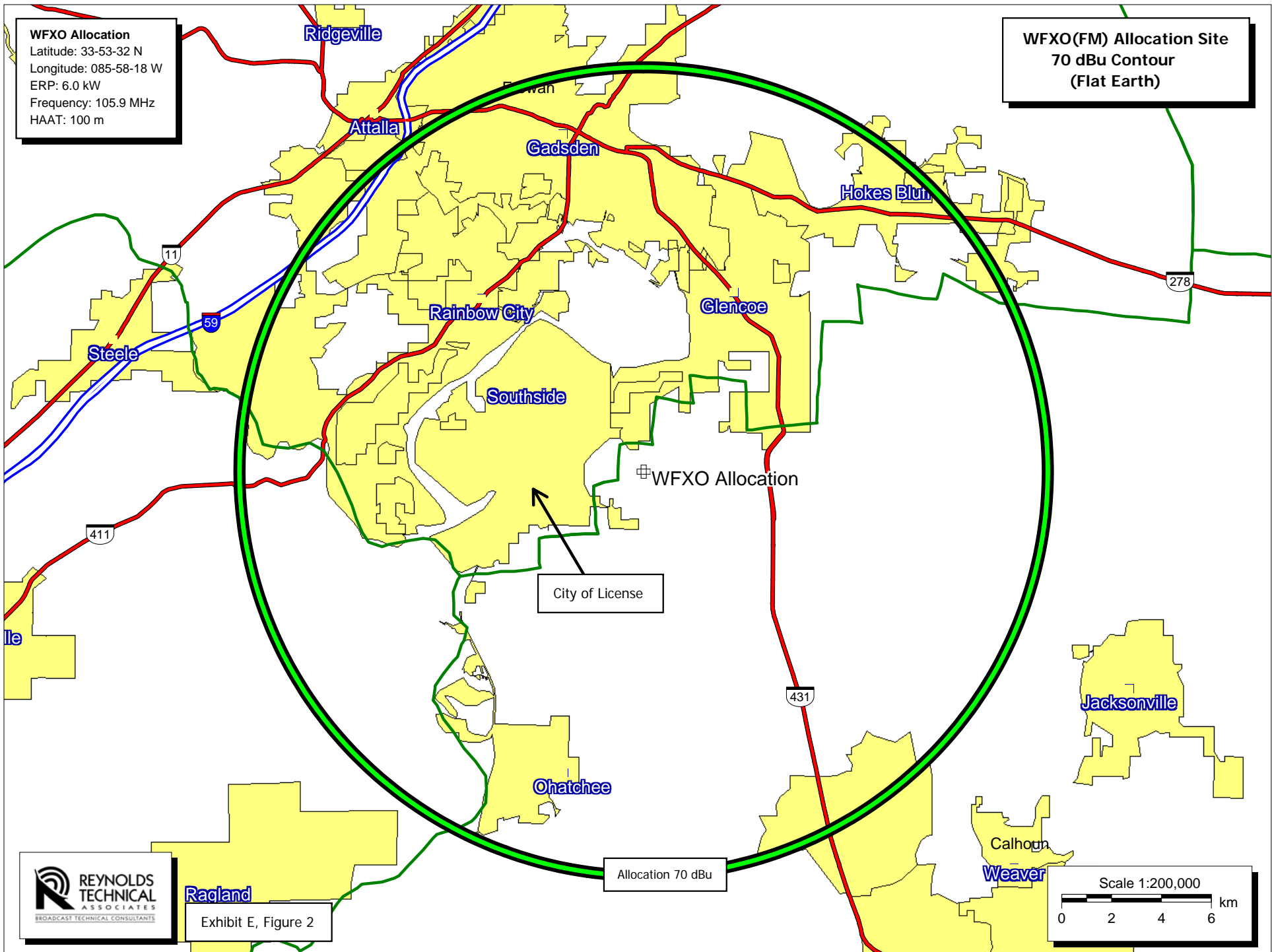


Exhibit E, Figure 2

Pop. Gain = 140,777
Pop. Loss = 47,212
Gain Area = 2,024 sq km
Loss Area = 2,024 sq km

WFXO Allocation

Latitude: 33-53-32 N
Longitude: 085-58-18 W
ERP: 6.0 kW
Frequency: 105.9 MHz
HAAT: 100 m

Licensed 60 dBu

WFXO(FM) Gain/Loss Study

*LOSS
AREA*

WFXO Licensed

*GAIN
AREA*

WFXO Allocation

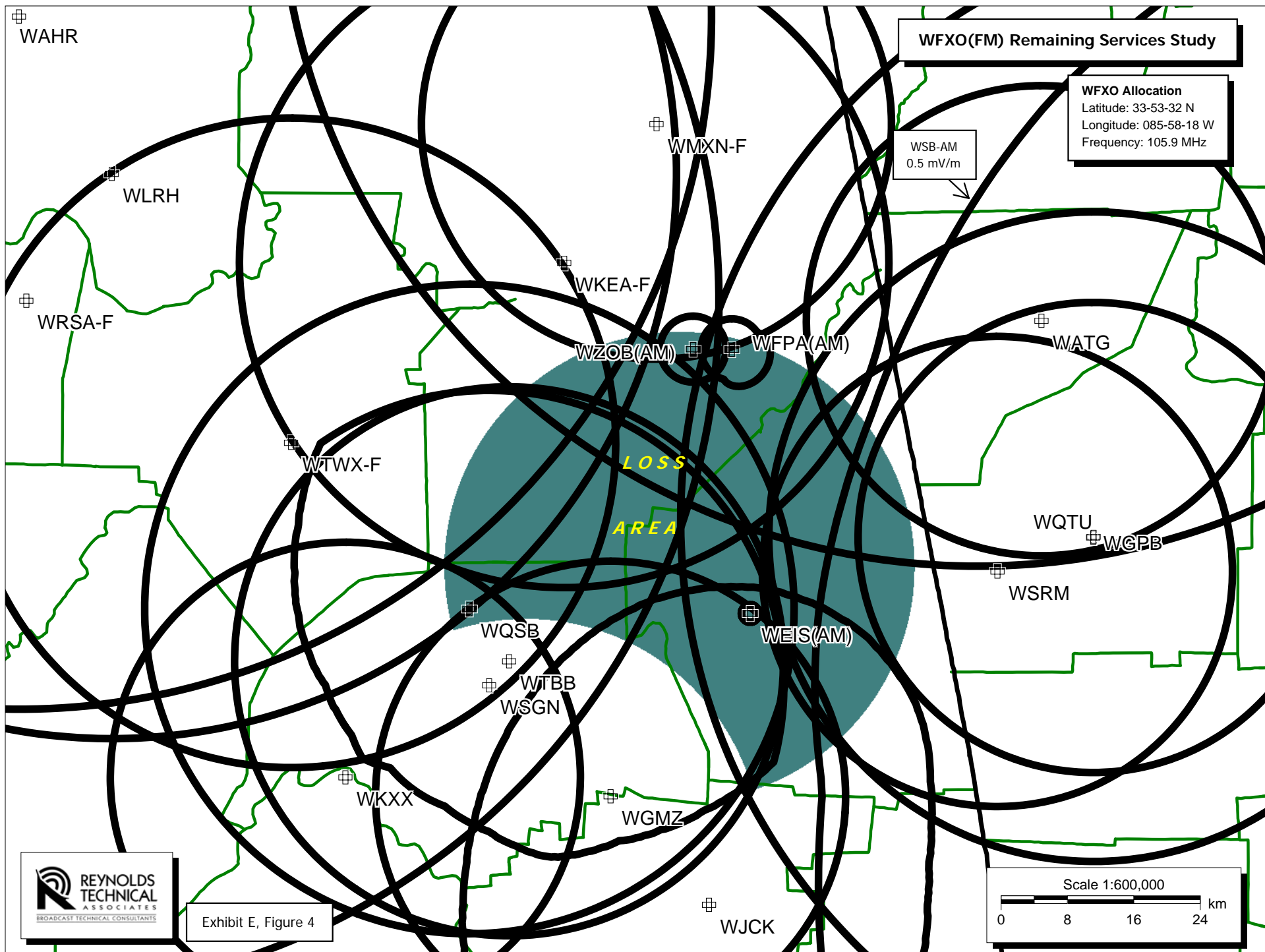
Proposed 60 dBu



Exhibit E, Figure 3

Scale 1:500,000

0 7 14 21 km

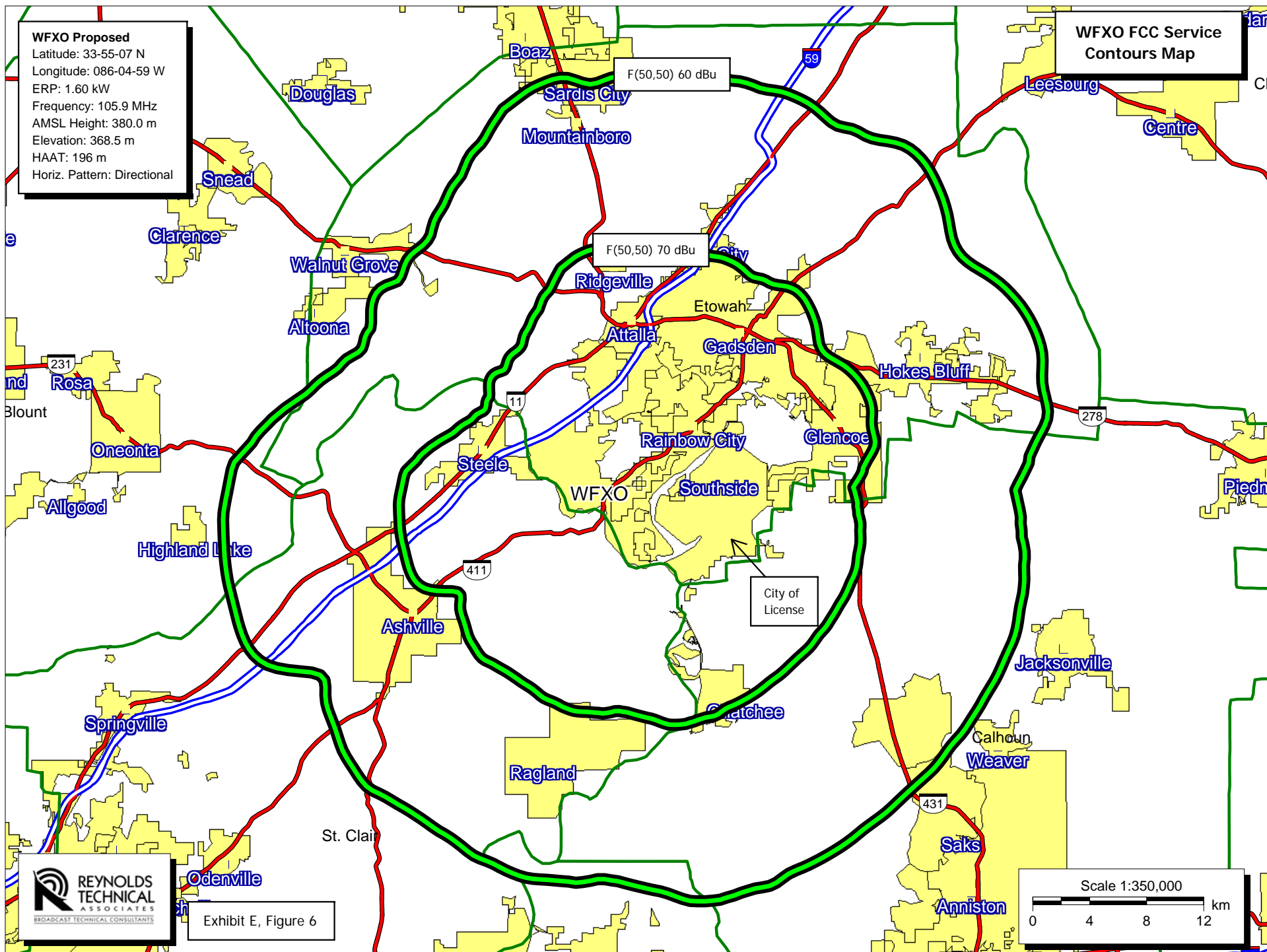


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WFXO Channel 290A at Southside, AL Channel Spacing Study

REFERENCE		DISPLAY DATES
33 55 07.0 N.	CLASS = A	DATA 04-11-09
86 04 59.0 W.	Current Spacings to 3rd Adj.	SEARCH 04-29-09
----- Channel 290 - 105.9 MHz -----		

Call	Channel	Location	Azi	Dist	FCC	Margin
WFXO	CP	290A	Centre	AL	72.0	39.93
					115.0	-75.07
WFXO	LIC	290A	Centre	AL	42.0	42.71
					115.0	-72.29
Of no concern: Coordinates used by WFXO.						
WTAK-FM	LIC-N	291C3	Hartselle	AL	319.7	79.41
					89.0	-9.59
Of concern: Protection afforded by §73.215.						
WHMA-FM	RSV	237A	Alexandria	AL	139.4	16.56
					10.0	6.54
WSTH-FM	LIC	291C1	Alexander City	AL	156.1	140.68
					133.0	7.68
WRTR	LIC-Z	290C3	Brookwood	AL	240.2	150.46
					142.0	8.46
WNRQ	LIC	290C	Nashville	TN	343.7	245.03
					226.0	19.03
WHMA-FM	APP-Z	237A	Alexandria	AL	151.1	36.92
					10.0	26.92
WVVB	LIC-Z	288C2	Hoover	AL	234.4	82.60
					55.0	27.60
WQAH-FM	LIC	289A	Addison	AL	295.5	100.93
					72.0	28.93
WWVA-FM	LIC	289C2	Canton	GA	83.3	151.38
					106.0	45.38



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Terrain/Contour Study

Reference Coordinates:

ERP: 1.6 kW

North Latitude: 33-55-07

West Longitude: 86-04-59

Azimuth °T.	Ave. Elev. 3 to 16 km (Meters AMSL)	FM - 2-6 Tables Effective Antenna Height (Meters AAT)	ERP (dBk)	F(50-50) Distance to 70 dBu Contour (km)	F(50-50) Distance to 60 dBu Contour (km)
0	179.3	200.7	2.041	16.5	28.6
5	178.7	201.3	2.041	16.5	28.7
10	174.6	205.4	2.041	16.7	28.9
15	172.5	207.5	2.041	16.8	29.1
20	170.5	209.5	2.041	16.9	29.2
25	172.3	207.7	2.041	16.8	29.1
30	176.2	203.8	2.041	16.6	28.8
35	167.8	212.2	2.041	17.0	29.4
40	156.4	223.6	2.041	17.5	30.2
45	165.6	214.4	2.041	17.1	29.6
50	182.7	197.3	2.041	16.3	28.4
55	193.1	186.9	2.041	15.9	27.7
60	177.6	202.4	2.041	16.6	28.7
65	166.0	214.0	2.041	17.1	29.5
70	162.4	217.6	2.041	17.2	29.8
75	170.0	210.0	2.041	16.9	29.3
80	172.0	208.0	2.041	16.8	29.1
85	192.5	187.5	2.041	15.9	27.7
90	209.3	170.7	2.041	15.2	26.6
95	205.3	174.7	2.041	15.4	26.9
100	196.5	183.5	2.041	15.8	27.5
105	189.2	190.8	2.041	16.1	27.9
110	184.1	195.9	2.041	16.3	28.3
115	181.8	198.2	2.041	16.4	28.4
120	180.9	199.1	2.041	16.4	28.5
125	180.0	200.0	2.041	16.5	28.6
130	179.8	200.2	2.041	16.5	28.6
135	177.5	202.5	2.041	16.6	28.7
140	177.5	202.5	2.041	16.6	28.7
145	175.5	204.5	2.041	16.7	28.9
150	172.3	207.7	2.041	16.8	29.1
155	170.1	209.9	2.041	16.9	29.3

Continued on next page

ERP: 1.6 kW

Azimuth °T.	Ave. Elev. 3 to 16 km (Meters AMSL)	FM - 2-6 Tables Effective Antenna Height (Meters AAT)	ERP (dBk)	F(50-50) Distance to 70 dBu Contour (km)	F(50-50) Distance to 60 dBu Contour (km)
160	167.4	212.6	2.041	17.0	29.4
165	165.8	214.2	2.041	17.1	29.6
170	163.6	216.4	2.041	17.2	29.7
175	173.0	207.0	2.041	16.8	29.1
180	184.2	195.8	2.041	16.3	28.3
185	190.5	189.5	2.041	16.0	27.9
190	183.1	196.9	2.041	16.3	28.4
195	178.0	202.0	2.041	16.6	28.7
200	179.2	200.8	2.041	16.5	28.6
205	181.6	198.4	2.041	16.4	28.5
210	186.5	193.5	2.041	16.2	28.1
215	187.6	192.4	2.041	16.1	28.1
220	182.7	197.3	2.041	16.4	28.4
225	183.9	196.1	2.041	16.3	28.3
230	194.5	185.5	2.041	15.8	27.6
235	206.6	173.4	2.041	15.3	26.8
240	210.8	169.2	2.041	15.1	26.5
245	168.6	211.4	2.041	17.0	29.4
250	162.6	217.4	2.041	17.2	29.8
255	164.5	215.5	2.041	17.1	29.6
260	166.5	213.5	2.041	17.0	29.5
265	169.8	210.2	2.041	16.9	29.3
270	177.1	202.9	2.041	16.6	28.8
275	193.4	186.6	2.041	15.9	27.7
280	216.3	163.7	2.041	14.8	26.1
285	229.5	150.5	1.263	13.6	24.2
290	234.6	145.4	0.485	12.7	22.9
295	234.7	145.3	-0.509	12.1	21.7
300	216.0	164.0	-1.502	12.1	21.8
305	193.4	186.6	-1.772	12.7	22.7
310	199.2	180.8	-2.041	12.4	22.1
315	197.6	182.4	-1.656	12.7	22.6
320	203.8	176.2	-1.270	12.8	22.8
325	198.9	181.1	-0.600	13.4	23.9
330	194.0	186.0	0.070	14.1	25.0
335	193.5	186.5	0.995	14.9	26.3
340	186.6	193.4	1.919	16.1	27.9
345	176.1	203.9	1.980	16.6	28.7
350	175.5	204.5	2.041	16.7	28.9
355	182.7	197.3	2.041	16.3	28.4

WFXO Proposed

Latitude: 33-55-07 N
Longitude: 086-04-59 W
ERP: 1.60 kW
Frequency: 105.9 MHz
AMSL Height: 380.0 m
Elevation: 368.5 m
HAAT: 196 m
Horiz. Pattern: Directional

WTAK-FM

Latitude: 34-27-45 N
Longitude: 086-38-36 W
ERP: 5.40 kW
Frequency: 106.1 MHz
AMSL Height: 460.0 m
Elevation: 384.0 m
HAAT: 221.0 m
Horiz. Pattern: Omni

**WFXO/WTAK-FM Protected and
Interfering Contours Study**

⊕
WTAK-FM

F(50,10) 54 dBu

F(50,50) 60 dBu

F(50,50) 60 dBu

F(50,10) 54 dBu

⊕
WFXO



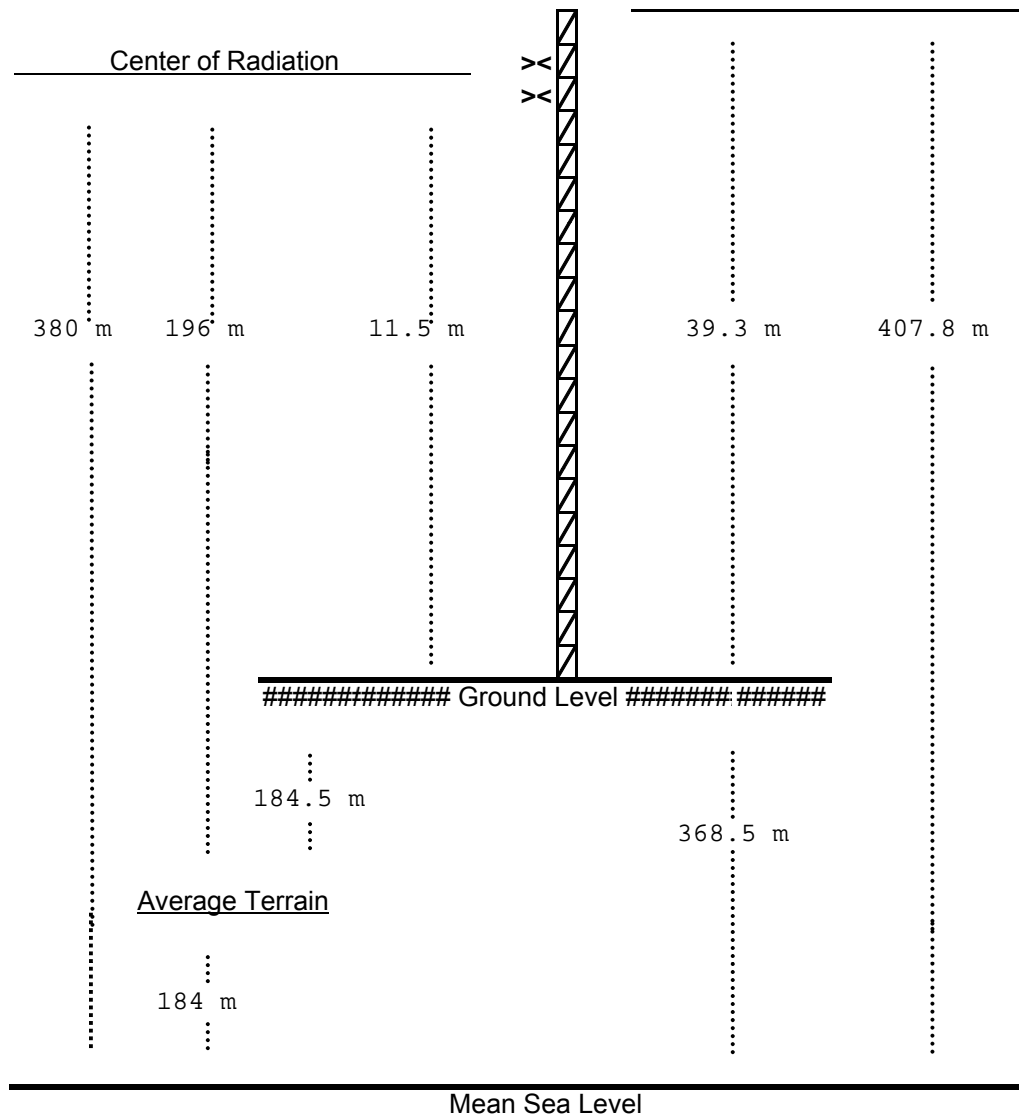
Exhibit E, Figure 8

Scale 1:400,000

0 5 10 15 km

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Vertical Sketch



Proposed Location: 33° 55' 07" N. Lat. 86° 04' 59" W. Long. [NAD27]

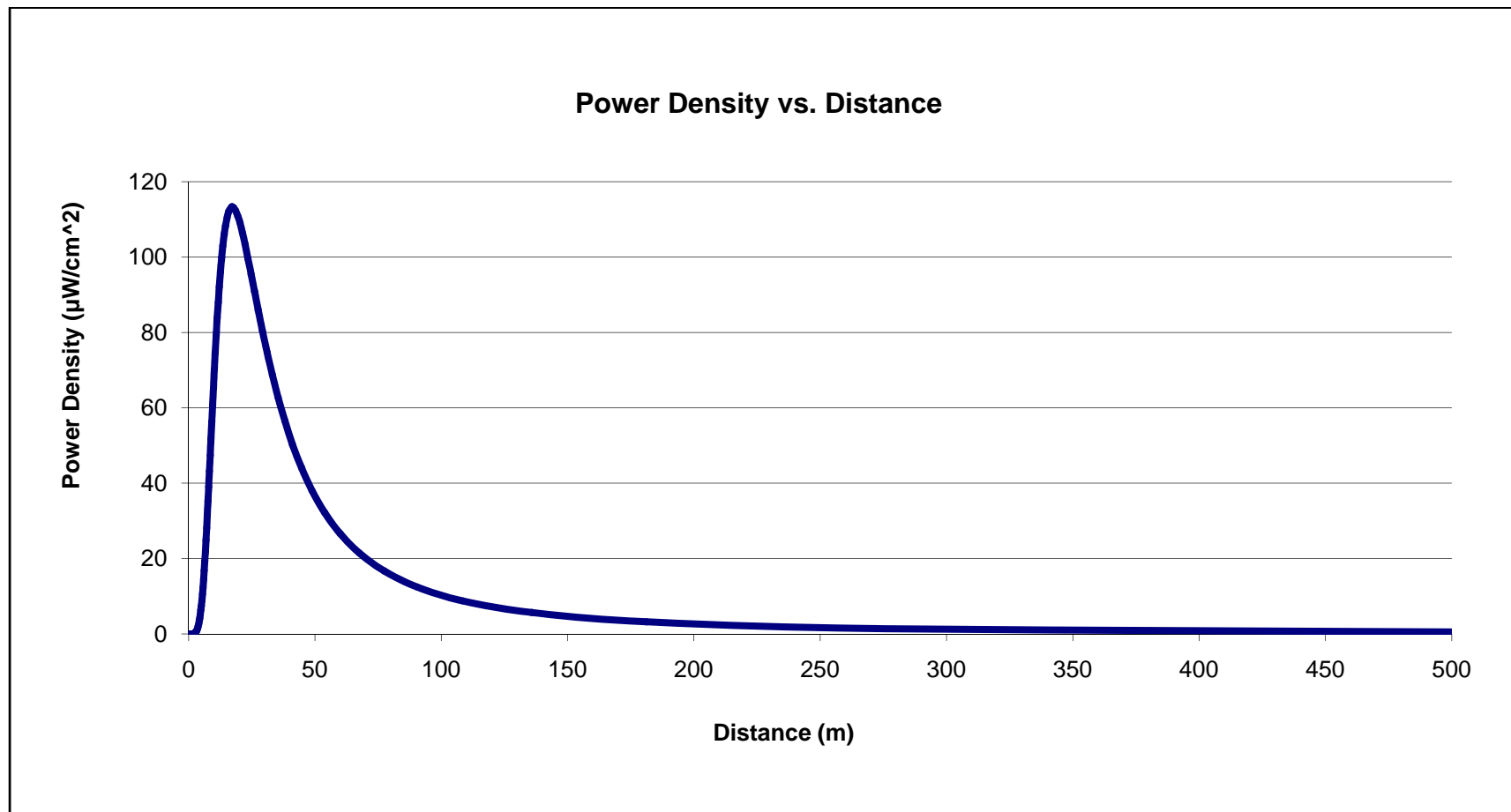
NOT DRAWN TO SCALE

Proposed Antenna: 2 elements (0.5 λ between elements)

ASRN: 1031305

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WFXO Human Exposure to Radiofrequency Radiation Study



Distance (m): **500**

Horizontal ERP (W): **1600**

Vertical ERP (W): **1600**

Antenna Height (m): **11.5**

Antenna Type: Shively **6813**

Number of Elements: **2**

Element Spacing: **0.5**

The maximum power density was found to be at **113.33474 $\mu\text{W}/\text{cm}^2$ at 17 meters.** Note: Graph resolution is 500 points.