

**Engineering Statement**  
**In Support of an Application for a Translator Construction Permit**

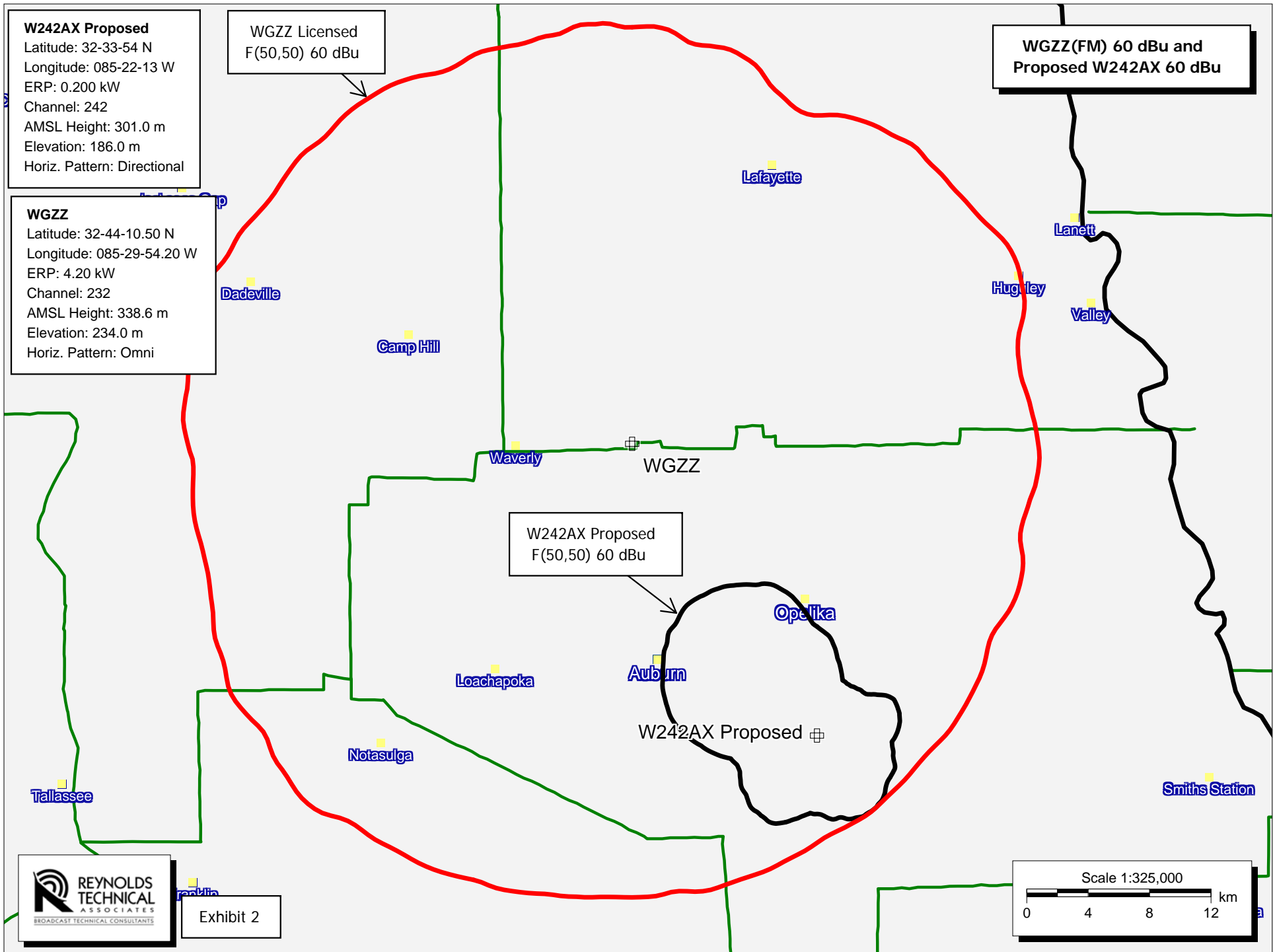
**W242AX Interference Study**

REFERENCE	CH# 242D - 96.3 MHz, Pwr= 0.2 kW DA, HAAT= 116.9 M, COR= 301 M	DISPLAY DATES
32 33 54.0 N.	Average Protected F(50-50)= 12.5 km	DATA 01-22-16
85 22 13.0 W.	Standard Directional	SEARCH 01-22-16

CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
242D Auburn	W242AX	LIC	C AL	288.2 108.1	12.61 BLFT20080617ACT	32 36 01.0 85 29 53.0	0.013 70	15.8 249	4.9 Layton Environmental	-13.7*	-28.2*
244A Opelika	WMXA	LIC	CN AL	0.0 0.0	0.00 BLH19980112KC	32 33 54.0 85 22 13.0	3.500 131	2.2 316	22.4 Amfm Radio Licenses, L.l.c	-9.3*	-22.9*
242C1 Albany	WJIZ-FM	LIC	CN GA	131.7 312.3	151.28 BMLH20031014AIE	31 39 16.0 84 10 36.0	100.000 142	152.0 211	56.1 Cc Licenses, Llc	-6.6*	75.8
240A Tuskegee	WQSI	LIC	CN AL	241.5 61.4	21.81 BLH19920803KD	32 28 17.0 85 34 28.0	4.300 115	2.5 233	25.9 New World Communications,	13.6	-4.3*
242C1 Albany	WJIZ-FM	CP	NCX GA	130.9 311.6	171.17 BPH20150902ABE	31 32 57.4 84 00 19.3	79.000 248	163.0 328	67.4 Cc Licenses, Llc	2.3	84.6
242L1 Lanett	WRNK-LP	LIC	 AL	25.8 205.9	38.10 BLL20040512AET	32 52 26.0 85 11 32.0	0.100 4	 215	 Contact Ministry Center	15.6	20.0
295D Crystal Valley	W295AY	LIC	C GA	110.3 290.5	31.47 BLFT20091019AEJ	32 27 59.0 85 03 22.0	0.250 121	20.6 231	13.7 Pmb Broadcasting, Llc	9.5R	22.0M
241L1 Columbus	WBUE-LP	LIC	 GA	95.5 275.7	38.84 BLL20050331BEM	32 31 52.0 84 57 31.0	0.085 32	 159	 Calvary Christian Life Min	26.3	26.5

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Terrain database is NGDC 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= , Co to 3rd adjacent.  
All separation margins (if shown) include rounding. Call signs with exclamation marks need not be protected.  
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.



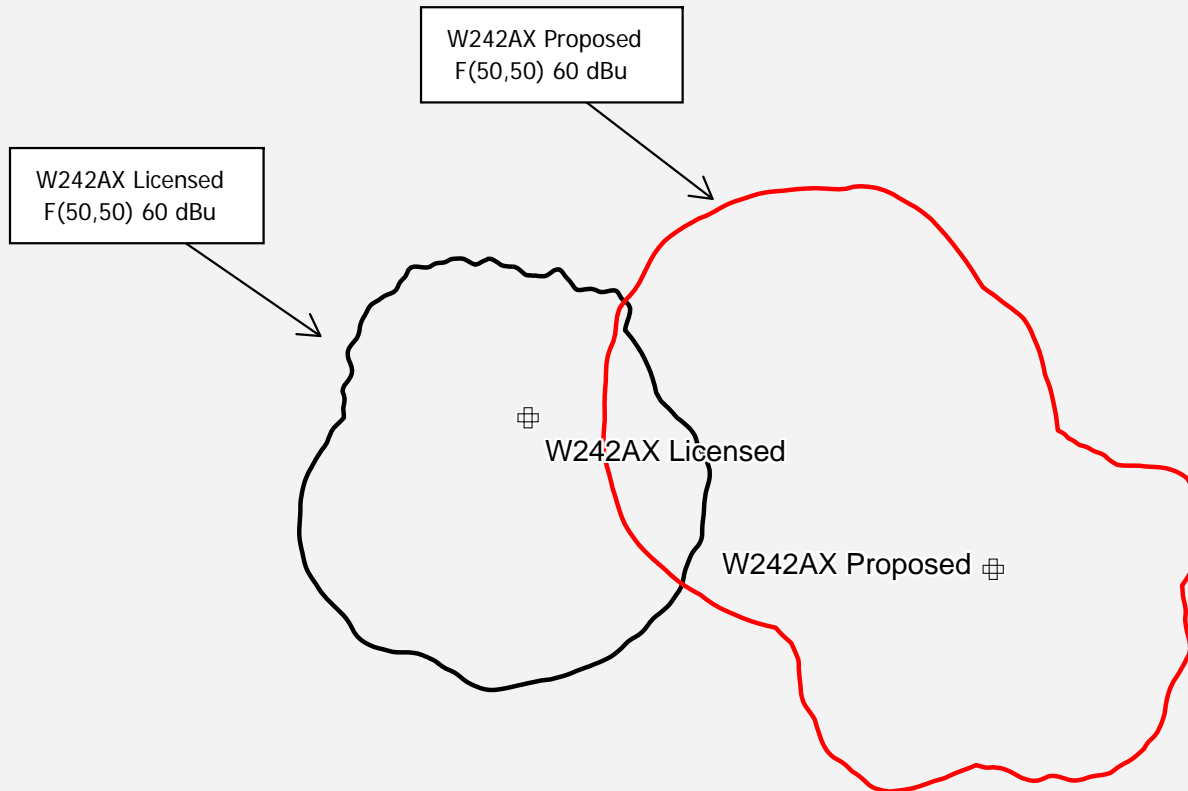
**W242AX Proposed**

Latitude: 32-33-54 N  
Longitude: 085-22-13 W  
ERP: 0.200 kW  
Channel: 242  
Frequency: 96.3 MHz  
AMSL Height: 301.0 m  
Elevation: 186.0 m  
Horiz. Pattern: Directional  
Vert. Pattern: No

**W242AX Licensed**

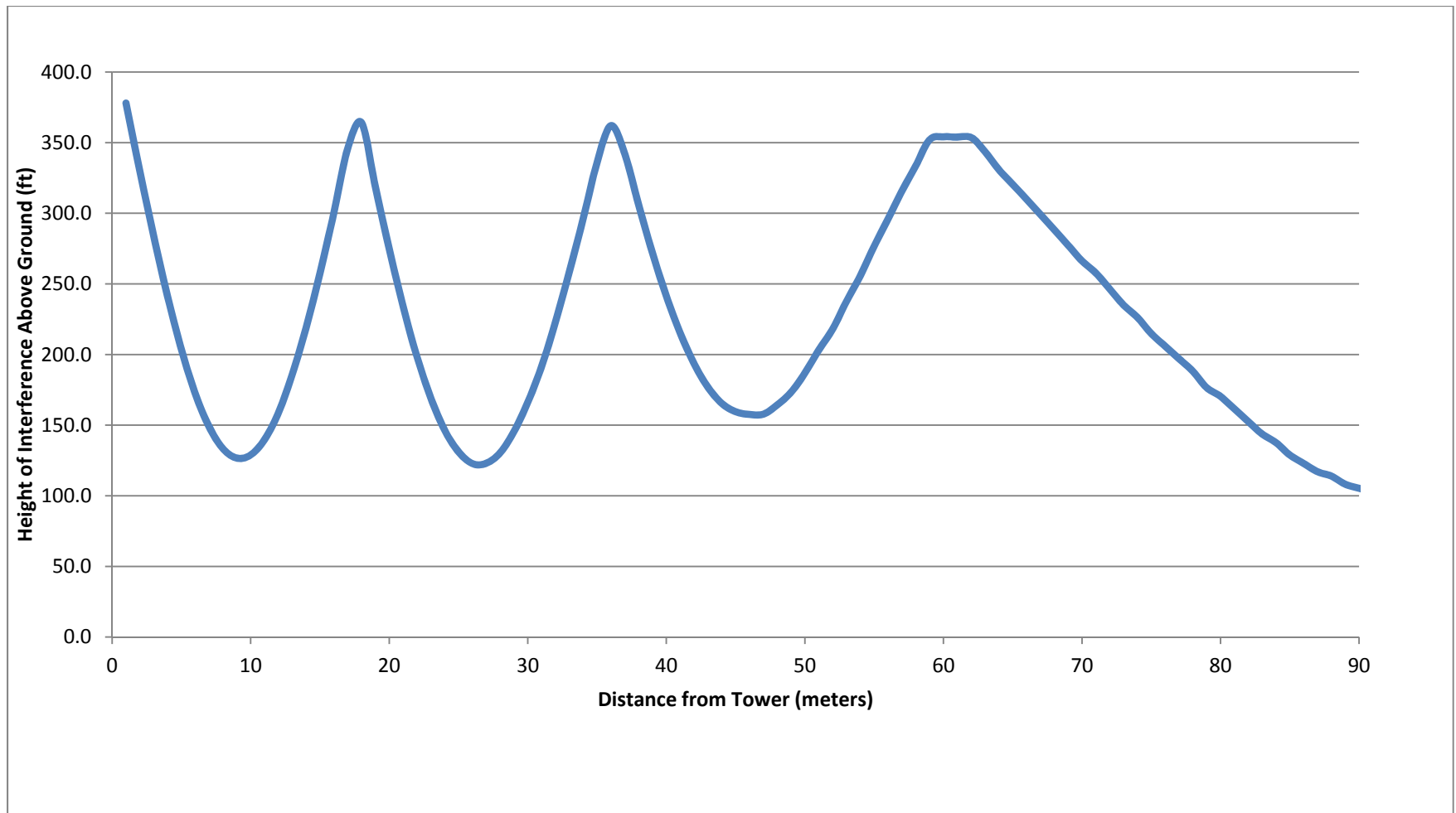
Latitude: 32-36-01 N  
Longitude: 085-29-53 W  
ERP: 0.013 kW  
Channel: 242  
Frequency: 96.3 MHz  
AMSL Height: 249.0 m  
Elevation: 188.0 m  
Horiz. Pattern: Omni

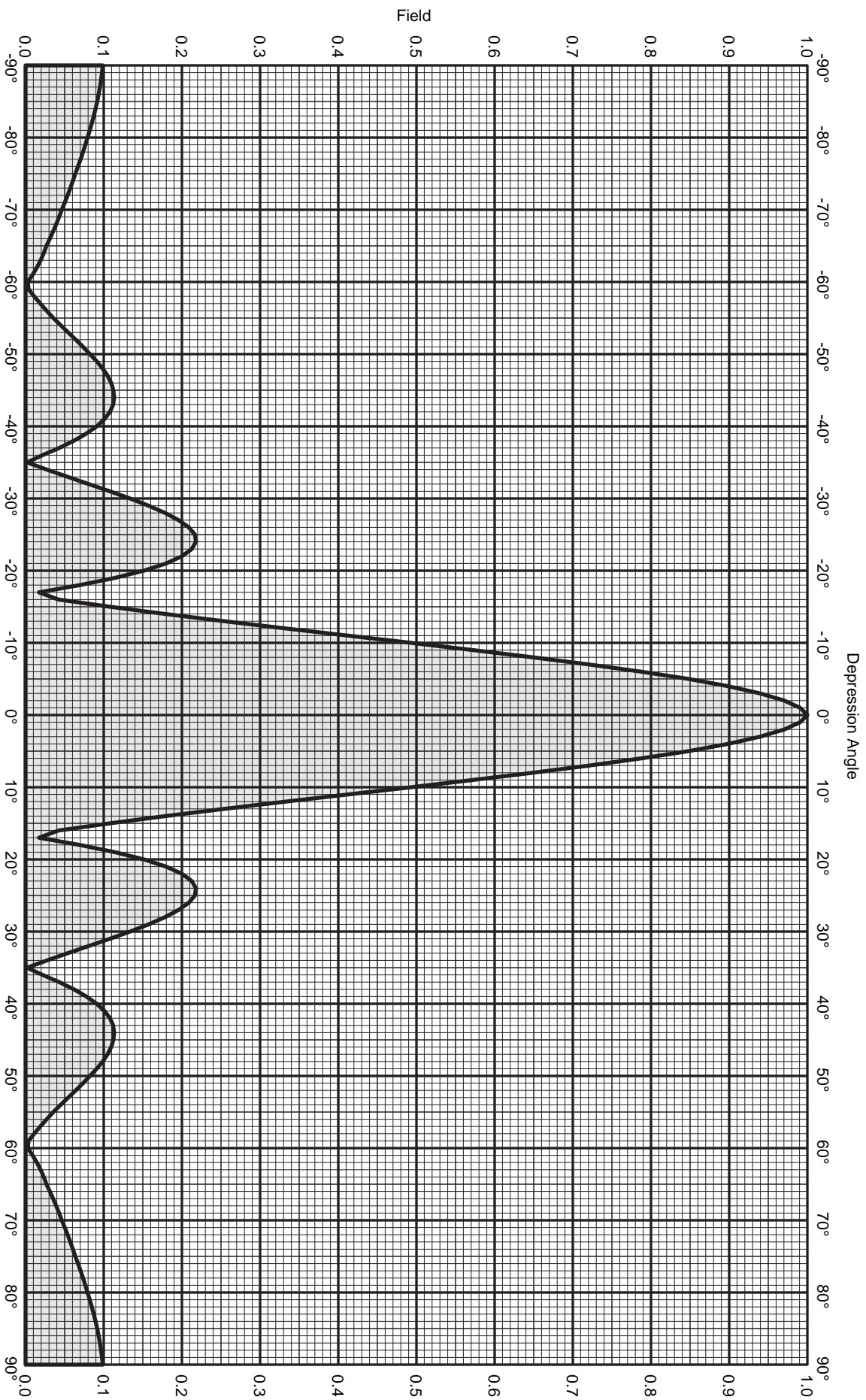
W242AX Licensed and Proposed  
F(50,50) 60 dBu Contours



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**W242AX 2<sup>nd</sup>-Adjacent Interference Offered to WQSI(FM)  
(showing the interference never reaches ground level)**





# KATHREIN SCALA DIVISION

Post Office Box 4580  
Medford, OR 97501 (USA)  
Phone: (541) 779-6500  
Fax: (541) 779-3991  
<http://www.kathrein-scala.com>

Four CA5-FW/CP/RM Yagis

Oriented at horizon

Maximum gain: 11.0 dBd

Circular polarization

Vertical stack

Vertical spacing: 0.87 wavelength

Vertical plane pattern



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 Vertical plane pattern

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
-90	0.099	-20.10	-9.10	0.12	-45	0.112	-18.99	-7.99	0.16
-89	0.098	-20.19	-9.19	0.12	-44	0.113	-18.91	-7.91	0.16
-88	0.097	-20.30	-9.30	0.12	-43	0.112	-19.01	-8.01	0.16
-87	0.095	-20.43	-9.43	0.11	-42	0.108	-19.34	-8.34	0.15
-86	0.094	-20.58	-9.58	0.11	-41	0.101	-19.92	-8.92	0.13
-85	0.092	-20.75	-9.75	0.11	-40	0.091	-20.82	-9.82	0.10
-84	0.090	-20.96	-9.96	0.10	-39	0.078	-22.17	-11.17	0.08
-83	0.087	-21.18	-10.18	0.10	-38	0.062	-24.17	-13.17	0.05
-82	0.085	-21.44	-10.44	0.09	-37	0.043	-27.32	-16.32	0.02
-81	0.082	-21.71	-10.71	0.08	-36	0.022	-33.29	-22.29	0.01
-80	0.079	-22.02	-11.02	0.08	-35	0.010	-40.00	-29.00	0.00
-79	0.076	-22.33	-11.33	0.07	-34	0.027	-31.27	-20.27	0.01
-78	0.074	-22.67	-11.67	0.07	-33	0.054	-25.38	-14.38	0.04
-77	0.070	-23.05	-12.05	0.06	-32	0.081	-21.84	-10.84	0.08
-76	0.067	-23.47	-12.47	0.06	-31	0.108	-19.35	-8.35	0.15
-75	0.064	-23.93	-12.93	0.05	-30	0.134	-17.48	-6.48	0.23
-74	0.061	-24.36	-13.36	0.05	-29	0.157	-16.06	-5.06	0.31
-73	0.057	-24.84	-13.84	0.04	-28	0.178	-14.97	-3.97	0.40
-72	0.054	-25.38	-14.38	0.04	-27	0.196	-14.16	-3.16	0.48
-71	0.050	-25.99	-14.99	0.03	-26	0.209	-13.60	-2.60	0.55
-70	0.046	-26.68	-15.68	0.03	-25	0.217	-13.29	-2.29	0.59
-69	0.043	-27.35	-16.35	0.02	-24	0.218	-13.23	-2.23	0.60
-68	0.039	-28.13	-17.13	0.02	-23	0.213	-13.45	-2.45	0.57
-67	0.035	-29.05	-18.05	0.02	-22	0.200	-13.98	-2.98	0.50
-66	0.031	-30.15	-19.15	0.01	-21	0.180	-14.91	-3.91	0.41
-65	0.027	-31.47	-20.47	0.01	-20	0.151	-16.40	-5.40	0.29
-64	0.023	-32.63	-21.63	0.01	-19	0.114	-18.84	-7.84	0.16
-63	0.019	-34.30	-23.30	0.00	-18	0.069	-23.17	-12.17	0.06
-62	0.014	-36.78	-25.78	0.00	-17	0.017	-35.34	-24.34	0.00
-61	0.010	-40.00	-29.00	0.00	-16	0.042	-27.48	-16.48	0.02
-60	0.010	-40.00	-29.00	0.00	-15	0.108	-19.33	-8.33	0.15
-59	0.010	-40.00	-29.00	0.00	-14	0.179	-14.95	-3.95	0.40
-58	0.011	-39.11	-28.11	0.00	-13	0.254	-11.90	-0.90	0.81
-57	0.019	-34.48	-23.48	0.00	-12	0.332	-9.57	1.43	1.39
-56	0.027	-31.35	-20.35	0.01	-11	0.413	-7.69	3.31	2.14
-55	0.036	-28.99	-17.99	0.02	-10	0.493	-6.14	4.86	3.06
-54	0.045	-26.94	-15.94	0.03	-9	0.572	-4.85	6.15	4.12
-53	0.055	-25.25	-14.25	0.04	-8	0.649	-3.76	7.24	5.30
-52	0.064	-23.84	-12.84	0.05	-7	0.721	-2.84	8.16	6.54
-51	0.074	-22.66	-11.66	0.07	-6	0.788	-2.07	8.93	7.82
-50	0.082	-21.68	-10.68	0.09	-5	0.848	-1.43	9.57	9.06
-49	0.091	-20.81	-9.81	0.10	-4	0.898	-0.93	10.07	10.16
-48	0.099	-20.12	-9.12	0.12	-3	0.939	-0.54	10.46	11.11
-47	0.105	-19.58	-8.58	0.14	-2	0.970	-0.26	10.74	11.86
-46	0.110	-19.21	-8.21	0.15	-1	0.991	-0.08	10.92	12.36
					0	1.000	0.00	11.00	12.59



Four CA5-FM/CP/RM Yagis  
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 Circular polarization

Vertical stack  
 Vertical spacing: 0.87 wavelength  
 Vertical plane pattern

Angle	Field	Rel.dB	dBd	PwrMult	Angle	Field	Rel.dB	dBd	PwrMult
0	1.000	0.00	11.00	12.59	45	0.112	-18.99	-7.99	0.16
1	0.991	-0.08	10.92	12.36	46	0.110	-19.21	-8.21	0.15
2	0.970	-0.26	10.74	11.86	47	0.105	-19.58	-8.58	0.14
3	0.939	-0.54	10.46	11.11	48	0.099	-20.12	-9.12	0.12
4	0.898	-0.93	10.07	10.16	49	0.091	-20.81	-9.81	0.10
5	0.848	-1.43	9.57	9.06	50	0.082	-21.68	-10.68	0.09
6	0.788	-2.07	8.93	7.82	51	0.074	-22.66	-11.66	0.07
7	0.721	-2.84	8.16	6.54	52	0.064	-23.84	-12.84	0.05
8	0.649	-3.76	7.24	5.30	53	0.055	-25.25	-14.25	0.04
9	0.572	-4.85	6.15	4.12	54	0.045	-26.94	-15.94	0.03
10	0.493	-6.14	4.86	3.06	55	0.036	-28.99	-17.99	0.02
11	0.413	-7.69	3.31	2.14	56	0.027	-31.34	-20.34	0.01
12	0.332	-9.57	1.43	1.39	57	0.019	-34.47	-23.47	0.00
13	0.254	-11.90	-0.90	0.81	58	0.011	-39.11	-28.11	0.00
14	0.179	-14.95	-3.95	0.40	59	0.010	-40.00	-29.00	0.00
15	0.108	-19.33	-8.33	0.15	60	0.010	-40.00	-29.00	0.00
16	0.042	-27.48	-16.48	0.02	61	0.010	-40.00	-29.00	0.00
17	0.017	-35.35	-24.35	0.00	62	0.014	-36.78	-25.78	0.00
18	0.069	-23.17	-12.17	0.06	63	0.019	-34.30	-23.30	0.00
19	0.114	-18.84	-7.84	0.16	64	0.023	-32.63	-21.63	0.01
20	0.151	-16.40	-5.40	0.29	65	0.027	-31.47	-20.47	0.01
21	0.180	-14.91	-3.91	0.41	66	0.031	-30.15	-19.15	0.01
22	0.200	-13.98	-2.98	0.50	67	0.035	-29.05	-18.05	0.02
23	0.213	-13.45	-2.45	0.57	68	0.039	-28.13	-17.13	0.02
24	0.218	-13.23	-2.23	0.60	69	0.043	-27.35	-16.35	0.02
25	0.217	-13.29	-2.29	0.59	70	0.046	-26.68	-15.68	0.03
26	0.209	-13.60	-2.60	0.55	71	0.050	-25.99	-14.99	0.03
27	0.196	-14.16	-3.16	0.48	72	0.054	-25.38	-14.38	0.04
28	0.178	-14.97	-3.97	0.40	73	0.057	-24.84	-13.84	0.04
29	0.157	-16.06	-5.06	0.31	74	0.061	-24.36	-13.36	0.05
30	0.134	-17.48	-6.48	0.23	75	0.064	-23.93	-12.93	0.05
31	0.108	-19.35	-8.35	0.15	76	0.067	-23.47	-12.47	0.06
32	0.081	-21.84	-10.84	0.08	77	0.070	-23.05	-12.05	0.06
33	0.054	-25.38	-14.38	0.04	78	0.074	-22.67	-11.67	0.07
34	0.027	-31.26	-20.26	0.01	79	0.076	-22.33	-11.33	0.07
35	0.010	-40.00	-29.00	0.00	80	0.079	-22.02	-11.02	0.08
36	0.022	-33.29	-22.29	0.01	81	0.082	-21.71	-10.71	0.08
37	0.043	-27.32	-16.32	0.02	82	0.085	-21.44	-10.44	0.09
38	0.062	-24.17	-13.17	0.05	83	0.087	-21.18	-10.18	0.10
39	0.078	-22.17	-11.17	0.08	84	0.090	-20.96	-9.96	0.10
40	0.091	-20.82	-9.82	0.10	85	0.092	-20.75	-9.75	0.11
41	0.101	-19.92	-8.92	0.13	86	0.094	-20.58	-9.58	0.11
42	0.108	-19.34	-8.34	0.15	87	0.095	-20.43	-9.43	0.11
43	0.112	-19.01	-8.01	0.16	88	0.097	-20.30	-9.30	0.12
44	0.113	-18.91	-7.91	0.16	89	0.098	-20.19	-9.19	0.12
					90	0.099	-20.10	-9.10	0.12