

TECHNICAL SUMMARY
APPLICATION FOR CONSTRUCTION PERMIT
FM TRANSLATOR STATION W295BH
SARASOTA, FLORIDA
CHANNEL 295 (106.9 MHZ) 0.25 KW (DA)

1. Application Purpose: It is proposed to relocate the W295BH transmitter site and modify its facilities.

2. Fill-in Translator Coverage/Minor Change Compliance: W295BH is a fill-in FM translator for AM station WSRQ on 1220 kHz at Sarasota, Florida (Facility ID 27663). Figure 1 is a map demonstrating that W295BH's proposed 60 dBu contour is entirely within a 25 mile circle from WSRQ's licensed transmitter site as required for fill-in compliance. Figure 1 also demonstrates that the proposed operation complies with the FCC's minor change rules as W295BH's proposed 60 dBu contour overlaps the licensed 60 dBu contour.

3. Section 74.1204 Compliance: Figure 2 is an allocation study for channel 295 based on Section 74.1204. Figure 2 lists the results of a numerical analysis of the potential for contour overlap to all nearby co-channel, first, second and third-adjacent channel facilities as well as IF related stations. For the purposes of the numerical study, the maximum HAAT (152 meters) and ERP (0.25 Watts) values were used in determining the maximum distance in any direction to the predicted coverage and interfering contours. Figure 3 demonstrates that the proposal complies with the contour overlap provisions of Section 73.1204 of the FCC rules, except with respect to WRUB discussed below.

Figure 3 shows that the proposed W295BH interfering 100 dBu contour overlaps the protected 60 dBu contour of 2nd adjacent channel station WRUB. However, based on the undesired-to-desired (U/D) signal strength interference ratio methodology, which is permitted by the FCC (per *Living Way Ministries, Inc.*, 17 FCC Rcd 17054, 17056, 2002), it has been determined that no actual interference would occur due to lack of population under Section 73.1204(d). Specifically, the calculated WRUB $f(50,50)$ field strength at the proposed W295BH site is 70.5 dBu. Using the 40 dB U/D ratio contained in Section 73.1204 of the FCC rules, the proposed W295BH $f(50,10)$ interfering signal is 110.5 dBu. Figure 4 is a graph of the proposed 110.5 dBu signal using the vertical plane relative field pattern for the proposed ERI model 100A-1 (see Figure 5) and assuming free-space propagation. As shown on Figure 4, the interfering 110.5 dBu signal will not reach ground level and, therefore, will contain no population.

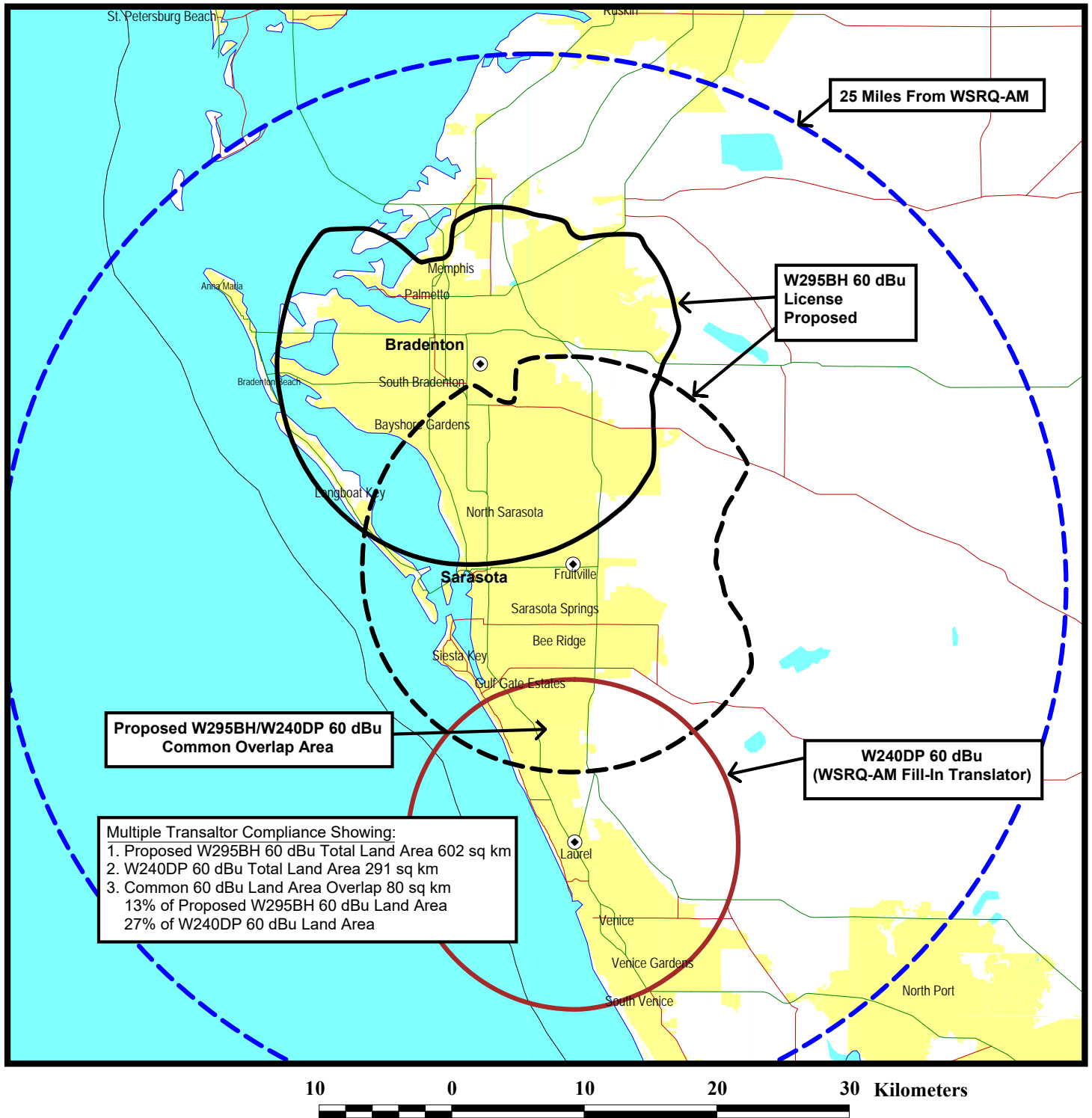
4. Multiple Translators: FM translator stations W295BH and W240DP (Ch. 240, Venice, FL, BLFT-20181106ABA, Facility ID 201660) are fill-in translators for AM station WSRQ. Figure 1 depicts the proposed W295BH and W240DP 60 dBu contours. As indicated, there is 60 dBu contour overlap between the proposed W295BH and W240DP. However, as also indicated, the overlap constitutes less than 50% of the total land area within either the proposed W259BH 60 dBu (13%) or the W240DP 60 dBu (27%) contours. Therefore, the proposal complies with the multiple translator requirements as it does not serve substantially the same area as W240DP.

5. Use of NGDC 1-Second Terrain: A 1-second terrain database was used to determine the locations of the protected and interfering contours depicted on Figures 1 and 3. Terrain data was derived along 72 equally spaced radials.

6. RFR Compliance: The proposed facilities were evaluated in terms of potential radiofrequency radiation (RFR) exposure at ground level to workers and the general public. The radiation center for the proposed antenna will be located 144 meters above ground level. The total ERP is 0.5 kW (horizontal & vertical polarization). A worst-case vertical plane relative field value of 1.0 is presumed for the antenna's downward radiation (for angles below 60 degrees downward). The calculated power density at a point 2 meters above ground level is 0.828 uW/cm^2 which is only 0.414% of the FCC's recommended limit of 200 uW/cm^2 for FM frequencies for an uncontrolled environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

Access to the transmitting site is restricted and appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol is in effect in the event that workers or other authorized personnel enter the restricted area or climb the tower to ensure that appropriate measure will be taken to assure worker safety with respect to RFR exposure. Such measures include limiting the exposure time, wearing protective clothing, reducing power to an acceptable level or termination of transmitter output power all together until workers leave the restricted area.

Figure 1



AM FILL-IN COMPLIANCE MAP

FM TRANSLATOR STATION W295BH
SARASOTA, FLORIDA
CH 295 (106.9 MHz) 0.250 KW (DA)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

FM Contour Study LMS

du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Channel: 295 **Coordinates:** 027-20-21.8 082-27-55.7 (NAD 83) **ERP:** 0.25 kW **Max. HAAT:** 152 m **Considering Only Interference Caused**

Comment: Proposed W295BH

Callsign	Chan.	Service	Status	Freq.	City	State	Co.	Rec.	Latitude	Dist. (km)	Sep. (km)	Spac. (km)
Facility ID	ARN			Class	DA 73.215	ERP (kW)	HAAT (m)		Longitude	Bear. (deg)	Comment	
W241DH	241	FX	L2C	96.1	BRADENTON	FL	US	C	27-32-43.1	25.21	29	-3.79
83547	BLANK	BLFT-20190718A	D	DRI		0.1			082-34-26.3	334.96	SHORT	/1
WULB-LP	242	FL	MOD	96.3	LONG BOAT KEY	FL	US	C	27-22-11.4	16.18	29	-12.82
195572	BLANK	BMLL-20150601A	LP1	NDI		0.1	11.652061		082-37-31.5	282.13	SHORT	/1
WRUB	293	FM	L2C	106.5	SARASOTA	FL	US	C	27-32-43.1	25.21	44.6	-19.39
48672	BLANK	BLH-20070420A	C2	NDI		13	178		082-34-26.3	334.96	SHORT	/2
WRUB 60.0 dBu desired distance: 43.5 km						Proposed 100.0 dBu undesired distance: 1.1 km						
W295BH	295	FX	L2C	106.9	SARASOTA	FL	US	C	27-28-32	16.63	67.57	-50.94
140532	BLANK	0000106014	D	DRI		0.25			082-32-10	335.29	SHORT	/3
W295BH 60.0 dBu desired distance: 15.5 km						Proposed 40.0 dBu undesired distance: 52.1 km						
WSRQ-FM	295	FM	MOD	106.9	ZOLFO SPRINGS	FL	US	C	27-22-00.2	66.15	80.33	-14.18
64699	BLANK	BMLED-2019080	A	NDI		5	109		081-47-51.3	87.21	SHORT	/4
WSRQ-FM 60.0 dBu desired distance: 28.3 km						Proposed 40.0 dBu undesired distance: 52.1 km						
W295CF	295	FX	L2C	106.9	ST PETERSBURG	FL	US	C	27-51-24.1	59.42	67.2	-7.78
139253	BLANK	0000106451	D	DRI		0.25			082-37-26.4	344.84	SHORT	/4
W295CF 60.0 dBu desired distance: 15.1 km						Proposed 40.0 dBu undesired distance: 52.1 km						
WQTA-LP	295	FL	MOD	106.9	TAMPA	FL	US	C	27-49-25.1	58.08	56.78	1.3
194557	BLANK	BMPL-20190912A	LP1	NDI		0.05	20.655552		082-14-25.3	22.34	CLOSE	/4
WQTA-LP 60.0 dBu desired distance: 4.7 km						Proposed 40.0 dBu undesired distance: 52.1 km						

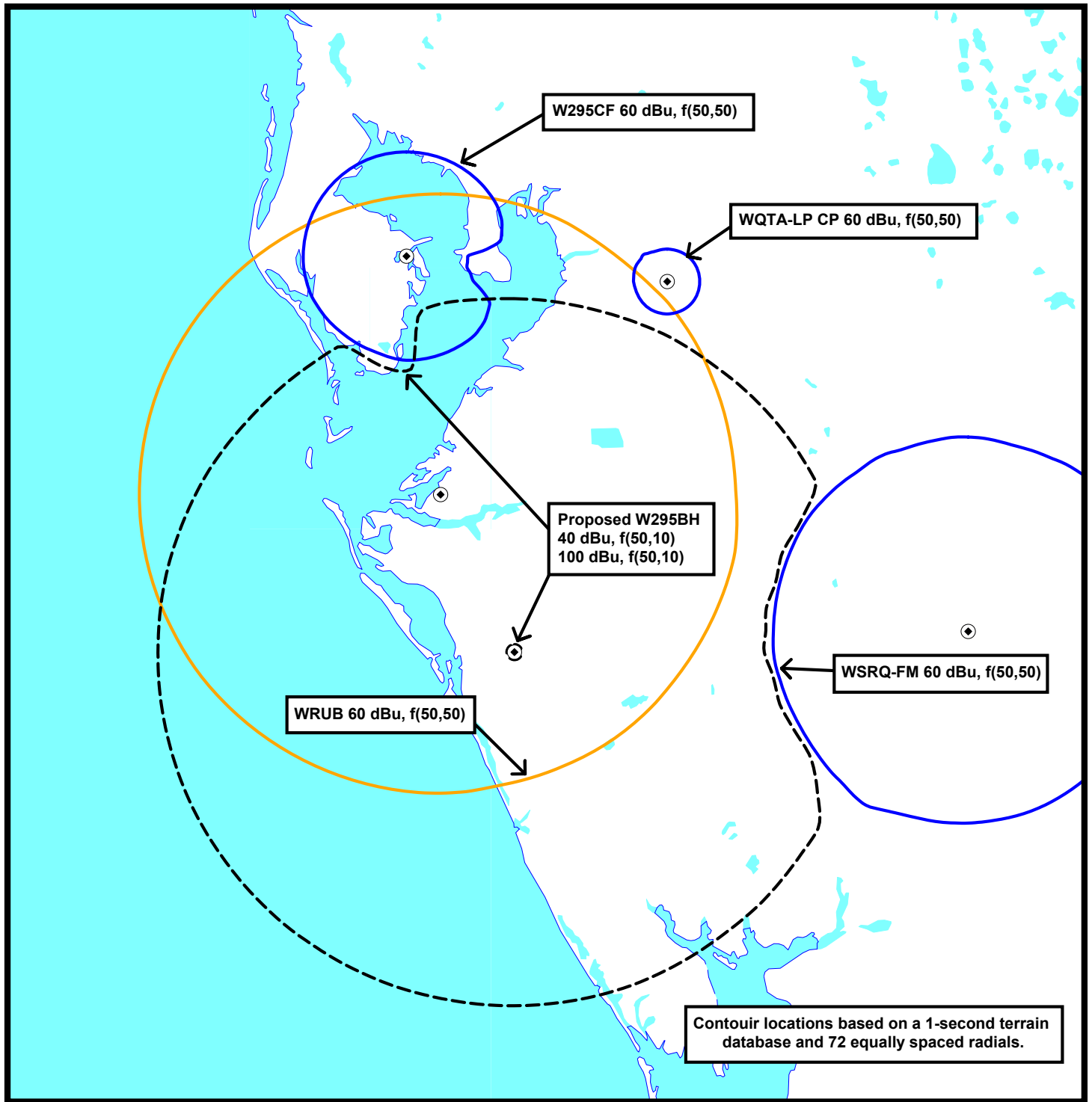
/1 Not an allocation issue.

/2 There will be overlap normally prohibited by Section 74.1204 (see Figure 3). However, based on the U/D signal strength interference ratio method which is permitted by the FCC (per Living Way Ministries, Inc.), it has been determined that no actual interference would occur due to lack of population per Section 74.1204(d). See Technical Summary.

/3 Current license.

/4 Proposal complies with the contour overlap provisions of Section 74.1204(a). See Technical Summary and Figure 3.

Figure 3



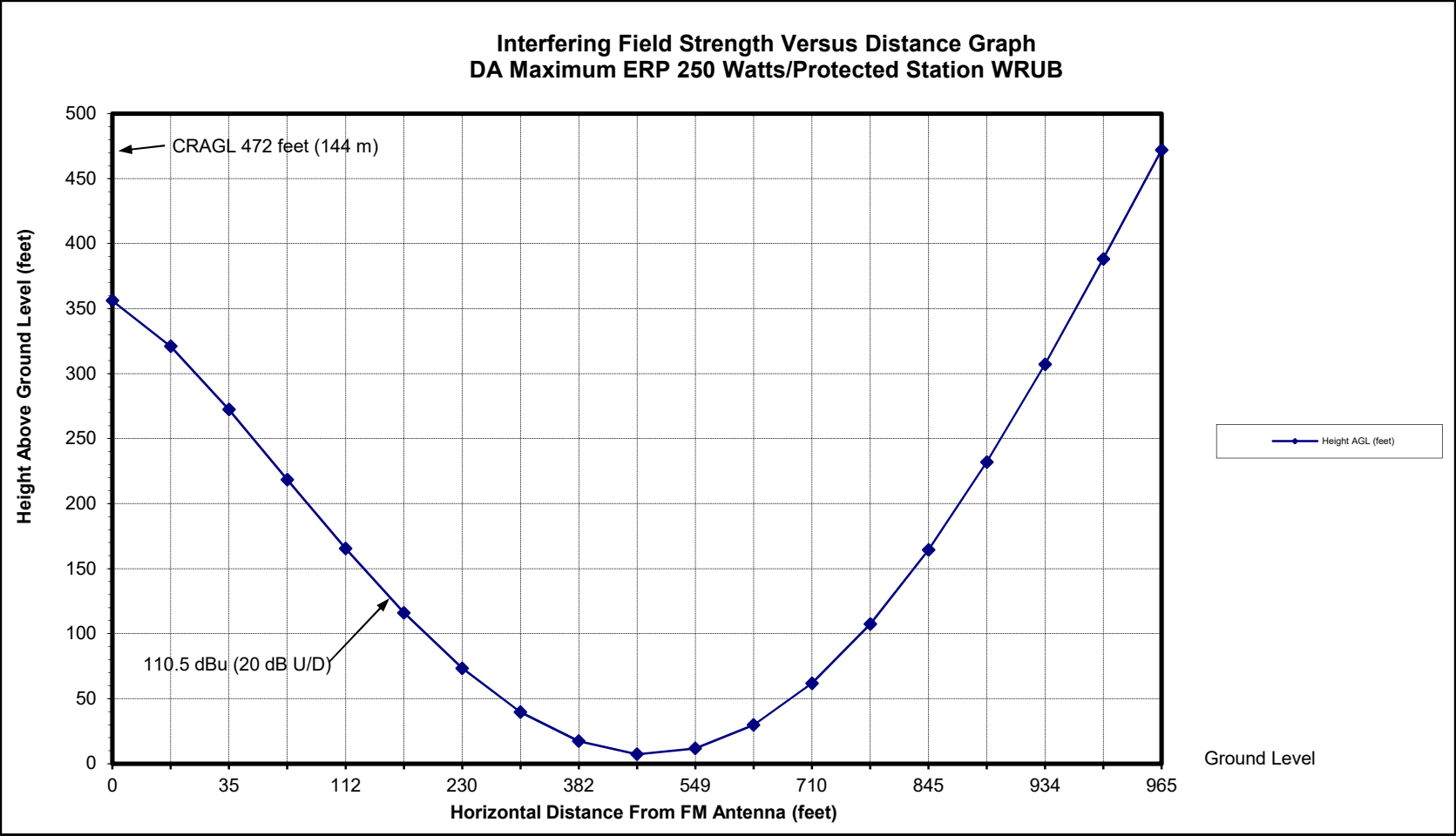
25 0 25 50 Kilometers

COMPLIANCE WITH SECTION 74.1204

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du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 4



TABULATED DATA FOR ELEVATION PATTERN

Type: 1001F
Polarization: Circular

ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB	ANGLE	FIELD	dB
5.00	0.993	-0.06	-6.75	0.988	-0.11	-27.00	0.819	-1.74	-50.50	0.465	-6.65	-74.00	0.135	-17.42
4.75	0.994	-0.05	-7.00	0.987	-0.11	-27.50	0.812	-1.81	-51.00	0.457	-6.80	-74.50	0.129	-17.77
4.50	0.995	-0.05	-7.25	0.986	-0.12	-28.00	0.806	-1.87	-51.50	0.449	-6.96	-75.00	0.124	-18.13
4.25	0.995	-0.04	-7.50	0.985	-0.13	-28.50	0.799	-1.94	-52.00	0.441	-7.11	-75.50	0.119	-18.50
4.00	0.996	-0.04	-7.75	0.984	-0.14	-29.00	0.793	-2.02	-52.50	0.433	-7.27	-76.00	0.114	-18.87
3.75	0.996	-0.03	-8.00	0.983	-0.15	-29.50	0.786	-2.09	-53.00	0.425	-7.43	-76.50	0.109	-19.26
3.50	0.997	-0.03	-8.25	0.982	-0.16	-30.00	0.780	-2.16	-53.50	0.417	-7.59	-77.00	0.104	-19.65
3.25	0.997	-0.02	-8.50	0.981	-0.17	-30.50	0.773	-2.24	-54.00	0.409	-7.76	-77.50	0.099	-20.06
3.00	0.998	-0.02	-8.75	0.980	-0.18	-31.00	0.766	-2.32	-54.50	0.401	-7.93	-78.00	0.095	-20.47
2.75	0.998	-0.02	-9.00	0.979	-0.19	-31.50	0.759	-2.40	-55.00	0.394	-8.10	-78.50	0.090	-20.90
2.50	0.998	-0.01	-9.25	0.977	-0.20	-32.00	0.752	-2.48	-55.50	0.386	-8.28	-79.00	0.086	-21.34
2.25	0.999	-0.01	-9.50	0.976	-0.21	-32.50	0.745	-2.56	-56.00	0.378	-8.45	-79.50	0.081	-21.79
2.00	0.999	-0.01	-9.75	0.975	-0.22	-33.00	0.738	-2.64	-56.50	0.370	-8.63	-80.00	0.077	-22.25
1.75	0.999	-0.01	-10.00	0.974	-0.23	-33.50	0.731	-2.73	-57.00	0.362	-8.82	-80.50	0.073	-22.73
1.50	0.999	-0.01	-10.50	0.971	-0.26	-34.00	0.723	-2.81	-57.50	0.355	-9.00	-81.00	0.069	-23.22
1.25	1.000	0.00	-11.00	0.968	-0.28	-34.50	0.716	-2.90	-58.00	0.347	-9.19	-81.50	0.065	-23.73
1.00	1.000	0.00	-11.50	0.965	-0.31	-35.00	0.709	-2.99	-58.50	0.339	-9.38	-82.00	0.061	-24.25
0.75	1.000	0.00	-12.00	0.962	-0.33	-35.50	0.701	-3.08	-59.00	0.332	-9.58	-82.50	0.058	-24.79
0.50	1.000	0.00	-12.50	0.959	-0.36	-36.00	0.694	-3.17	-59.50	0.324	-9.78	-83.00	0.054	-25.34
0.25	1.000	0.00	-13.00	0.956	-0.39	-36.50	0.687	-3.27	-60.00	0.317	-9.98	-83.50	0.051	-25.92
0.00	1.000	0.00	-13.50	0.952	-0.42	-37.00	0.679	-3.36	-60.50	0.310	-10.19	-84.00	0.047	-26.51
-0.25	1.000	0.00	-14.00	0.949	-0.46	-37.50	0.671	-3.46	-61.00	0.302	-10.39	-84.50	0.044	-27.13
-0.50	1.000	0.00	-14.50	0.945	-0.49	-38.00	0.664	-3.56	-61.50	0.295	-10.61	-85.00	0.041	-27.77
-0.75	1.000	0.00	-15.00	0.941	-0.53	-38.50	0.656	-3.66	-62.00	0.288	-10.82	-85.50	0.038	-28.44
-1.00	1.000	0.00	-15.50	0.937	-0.56	-39.00	0.648	-3.76	-62.50	0.280	-11.04	-86.00	0.035	-29.13
-1.25	1.000	0.00	-16.00	0.933	-0.60	-39.50	0.641	-3.87	-63.00	0.273	-11.27	-86.50	0.032	-29.85
-1.50	0.999	-0.01	-16.50	0.929	-0.64	-40.00	0.633	-3.97	-63.50	0.266	-11.49	-87.00	0.029	-30.61
-1.75	0.999	-0.01	-17.00	0.925	-0.68	-40.50	0.625	-4.08	-64.00	0.259	-11.73	-87.50	0.027	-31.39
-2.00	0.999	-0.01	-17.50	0.921	-0.72	-41.00	0.617	-4.19	-64.50	0.252	-11.96	-88.00	0.024	-32.22
-2.25	0.999	-0.01	-18.00	0.916	-0.76	-41.50	0.609	-4.30	-65.00	0.245	-12.20	-88.50	0.022	-33.09
-2.50	0.998	-0.01	-18.50	0.912	-0.80	-42.00	0.601	-4.42	-65.50	0.239	-12.45	-89.00	0.020	-34.00
-2.75	0.998	-0.02	-19.00	0.907	-0.85	-42.50	0.593	-4.53	-66.00	0.232	-12.70	-89.50	0.018	-34.96
-3.00	0.998	-0.02	-19.50	0.902	-0.89	-43.00	0.586	-4.65	-66.50	0.225	-12.95	-90.00	0.016	-35.99
-3.25	0.997	-0.02	-20.00	0.897	-0.94	-43.50	0.578	-4.77	-67.00	0.219	-13.21			
-3.50	0.997	-0.03	-20.50	0.892	-0.99	-44.00	0.570	-4.89	-67.50	0.212	-13.47			
-3.75	0.996	-0.03	-21.00	0.887	-1.04	-44.50	0.562	-5.01	-68.00	0.206	-13.74			
-4.00	0.996	-0.04	-21.50	0.882	-1.09	-45.00	0.554	-5.14	-68.50	0.199	-14.01			
-4.25	0.995	-0.04	-22.00	0.877	-1.14	-45.50	0.546	-5.26	-69.00	0.193	-14.29			
-4.50	0.995	-0.05	-22.50	0.871	-1.20	-46.00	0.537	-5.39	-69.50	0.187	-14.58			
-4.75	0.994	-0.05	-23.00	0.866	-1.25	-46.50	0.529	-5.52	-70.00	0.181	-14.87			
-5.00	0.993	-0.06	-23.50	0.860	-1.31	-47.00	0.521	-5.66	-70.50	0.175	-15.16			
-5.25	0.993	-0.06	-24.00	0.855	-1.36	-47.50	0.513	-5.79	-71.00	0.169	-15.47			
-5.50	0.992	-0.07	-24.50	0.849	-1.42	-48.00	0.505	-5.93	-71.50	0.163	-15.77			
-5.75	0.991	-0.08	-25.00	0.843	-1.48	-48.50	0.497	-6.07	-72.00	0.157	-16.09			
-6.00	0.990	-0.08	-25.50	0.837	-1.55	-49.00	0.489	-6.21	-72.50	0.151	-16.41			
-6.25	0.990	-0.09	-26.00	0.831	-1.61	-49.50	0.481	-6.36	-73.00	0.146	-16.74			
-6.50	0.989	-0.10	-26.50	0.825	-1.67	-50.00	0.473	-6.50	-73.50	0.140	-17.07			

Preliminary, subject to final design and review.