

TECHNICAL SUMMARY
APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT
FCC FILE NO. BNPFT-20180418AAW
FM TRANSLATOR STATION W286DN
DECATUR, GEORGIA
CHANNEL 286 (105.1 MHZ) 0.135 KW (DA)

1. Application Purpose: It is proposed to modify the construction permit for W286DN (FCC File No. BNPFT-20180418AAW, Facility ID 203206) to modify its facilities from its authorized site location (ASRN 1018919). Specifically, it is proposed to reduce the antenna height from 149 meter AGL to 138.7 meters AGL on the existing 152.4 meter tower and increase the ERP from 0.12 kW to 0.135 kW. No other changes are proposed.

2. Fill-in Translator Coverage & Minor Change Compliance: Station W286DN is a fill-in translator for AM station WWSZ on 1420 kHz at Decatur, GA (BL-7160, Facility ID 14745). Figure 1 is a map demonstrating that the proposed 60 dBu contour is within a 25 mile circle from the WWSZ transmitter site as required for fill-in compliance. In addition, the proposal complies with the FCC's minor change rules as there will be no change in transmitter.

3. Section 74.1204 compliance: Figure 2 is an allocation study for channel 286 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 (207 meters) and ERP (0.135 kW) 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 stations WFSH-FM and WBZY discussed below.

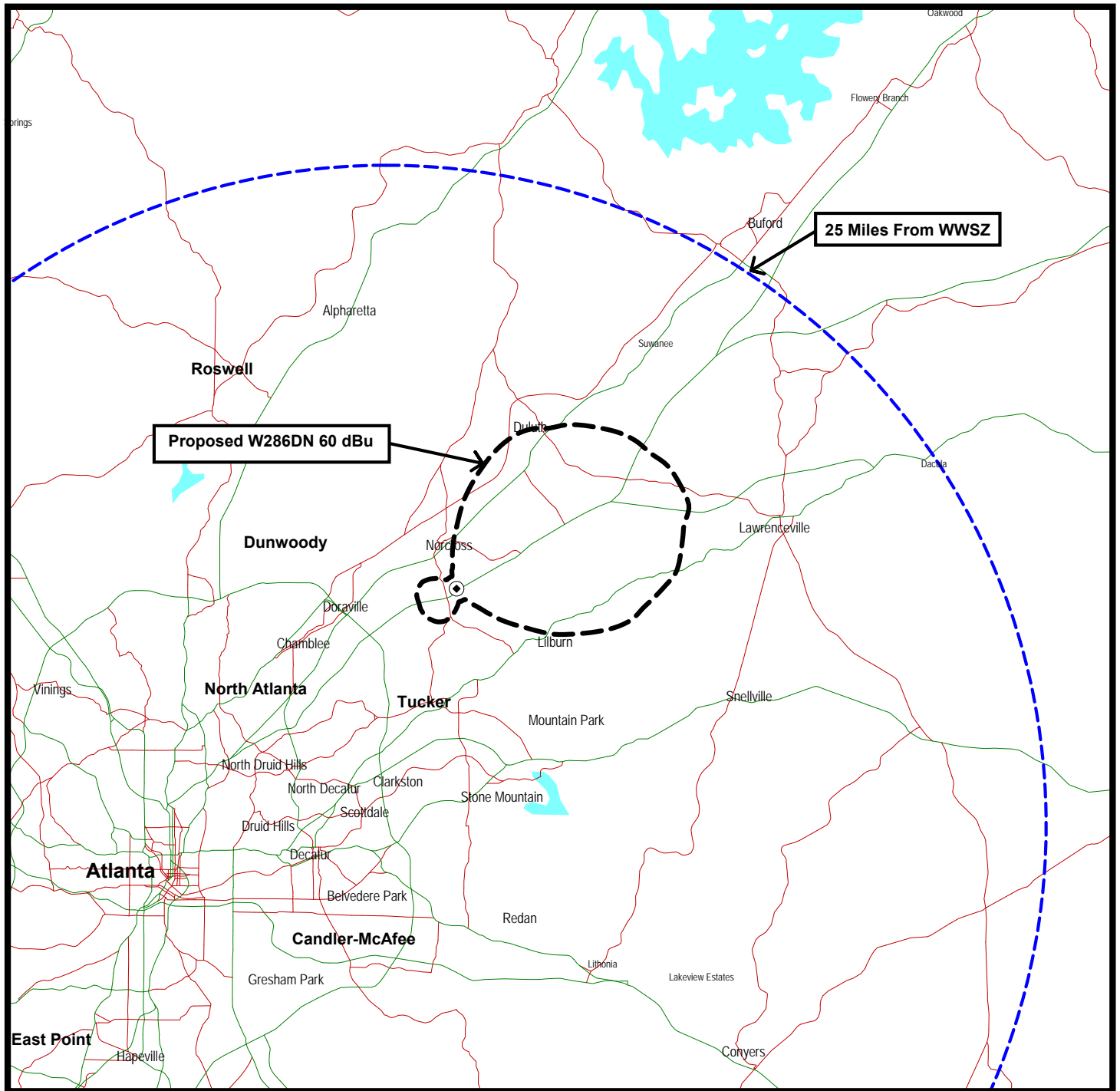
Specifically, the proposal does not comply with the contour overlap provisions of Section 73.1204 of the FCC rules with respect to second lower adjacent channel station WFSH-FM (Ch. 284C1/104.7 MHz, Athens, GA) and third upper adjacent channel station WBZY (Ch. 289C2/105.7 MHz, Canton, GA). However, 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 74.1204(d). Specifically, the calculated WFSH-FM $f(50,50)$ field strength at the proposed site is 76.1 dBu. Using the 40 dB U/D ratio contained in Section 74.1204 of the FCC rules, the proposed $f(50,10)$ interfering signal is 116.1 dBu. Similarly, the calculated WBZY $f(50,50)$ field strength at the proposed site is 73.0 dBu. Using the 40 dB U/D ratio contained in Section 74.1204 of the FCC rules, the proposed $f(50,10)$ interfering signal is 113.0 dBu. As the 113.0 dBu interfering signal to WBZY is the lowest it is the most critical. Figure 4 is a graph of the

proposed 113.0 dBu signal using the vertical plane relative field pattern for the proposed Scala model CL-FM directional antenna (see Figure 5) and assuming free-space propagation. As shown on Figure 4, the interfering 113.0 dBu signal will not reach ground level and, therefore, will contain no population. Therefore, the proposal complies with the lack of population criteria under Section 74.1204(d).

4. 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 Scala CL-FM antenna will be located 138.7 meters above ground level. The total ERP is 0.135 kW (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 0.241 uW/cm² which is only 0.121% of the FCC's recommended limit of 200 uW/cm² for FM frequencies for an uncontrolled environment. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the RF emission rules.

The transmitting site will be appropriately marked with RFR warning signs. Furthermore, as this is a multi-user site, a formal RFR protection protocol will be 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 W286DN
DECATUR, GEORGIA
CH 286 (105.1MHZ) 0.135 KW (DA)

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

FM Contour Study LMS

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



Channel: 286 **Coordinates:** 033-55-01.3 084-12-05.9 (NAD 83) **ERP:** 0.135 kW **Max. HAAT:** 207 m **Considering Only Interference Caused**

Comment: Proposed W286DN

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	
W233BF	233	FX	L2C	94.5	ATLANTA	GA	US	C	33-44-41.4	24.07	29	-4.93
146158	BLANK	BLFT-20190919A	D	NDI		0.166			084-21-35.7	217.41	SHORT	/1
WFSH-FM	284	FM	MOD	104.7	ATHENS	GA	US	C	33-52-02.4	34.93	74.88	-39.95
56390	BLANK	BMLH-20060726	C1	NDI		24	505		083-49-43.6	99.02	SHORT	/2
WFSH-FM 60.0 dBu desired distance: 74.1 km Proposed 100.0 dBu undesired distance: 0.8 km												
W286DN	286	FX	CP	105.1	DECATUR	GA	US	C	33-55-01.4	0.01	75.63	-75.62
203206	BLANK	BNPFT-20180411	D	DRI		0.12			084-12-05.7	58.93	SHORT	/3
W286DN 60.0 dBu desired distance: 23.7 km Proposed 40.0 dBu undesired distance: 51.9 km												
W283DP	286	FX	AMD	105.1	CANTON	GA	US	C	34-09-14	38.9	74.01	-35.11
203141	BLANK	0000121088	D	DRI		0.1			084-30-44	312.71	SHORT	/4
W283DP 60.0 dBu desired distance: 22.1 km Proposed 40.0 dBu undesired distance: 51.9 km												
WXNV-LP	286	FL	L2C	105.1	LOGANVILLE	GA	US	C	33-46-48.2	35.71	57.55	-21.84
196729	BLANK	BLL-20161122AE	LP1	NDI		0.039	48		083-51-08.8	115.18	SHORT	/4
WXNV-LP 60.0 dBu desired distance: 5.6 km Proposed 40.0 dBu undesired distance: 51.9 km												
WLVG	286	FM	L2C	105.1	CLERMONT	GA	US	C	34-33-58.3	81.92	93.89	-11.97
26854	BLANK	BLED-20140404A	C3	NDI		3.1	281.8		083-46-39.7	28.24	SHORT	/4
WLVG 60.0 dBu desired distance: 42.0 km Proposed 40.0 dBu undesired distance: 51.9 km												
WRDG	287	FM	L2C	105.3	BOWDON	GA	US	C	33-24-41.4	80.87	98.81	-17.94
63406	BLANK	BLH-20020220A	C1	NDI		61	367		084-49-47.8	226.14	SHORT	/4
WRDG 60.0 dBu desired distance: 74.7 km Proposed 54.0 dBu undesired distance: 24.1 km												
WBZY	289	FM	L2C	105.7	CANTON	GA	US	C	34-03-58.3	28.6	55.22	-26.62
10698	BLANK	BLH-20040708A	C2	NDI		20	238		084-27-14.7	305.55	SHORT	/2
WBZY 60.0 dBu desired distance: 54.4 km Proposed 100.0 dBu undesired distance: 0.8 km												

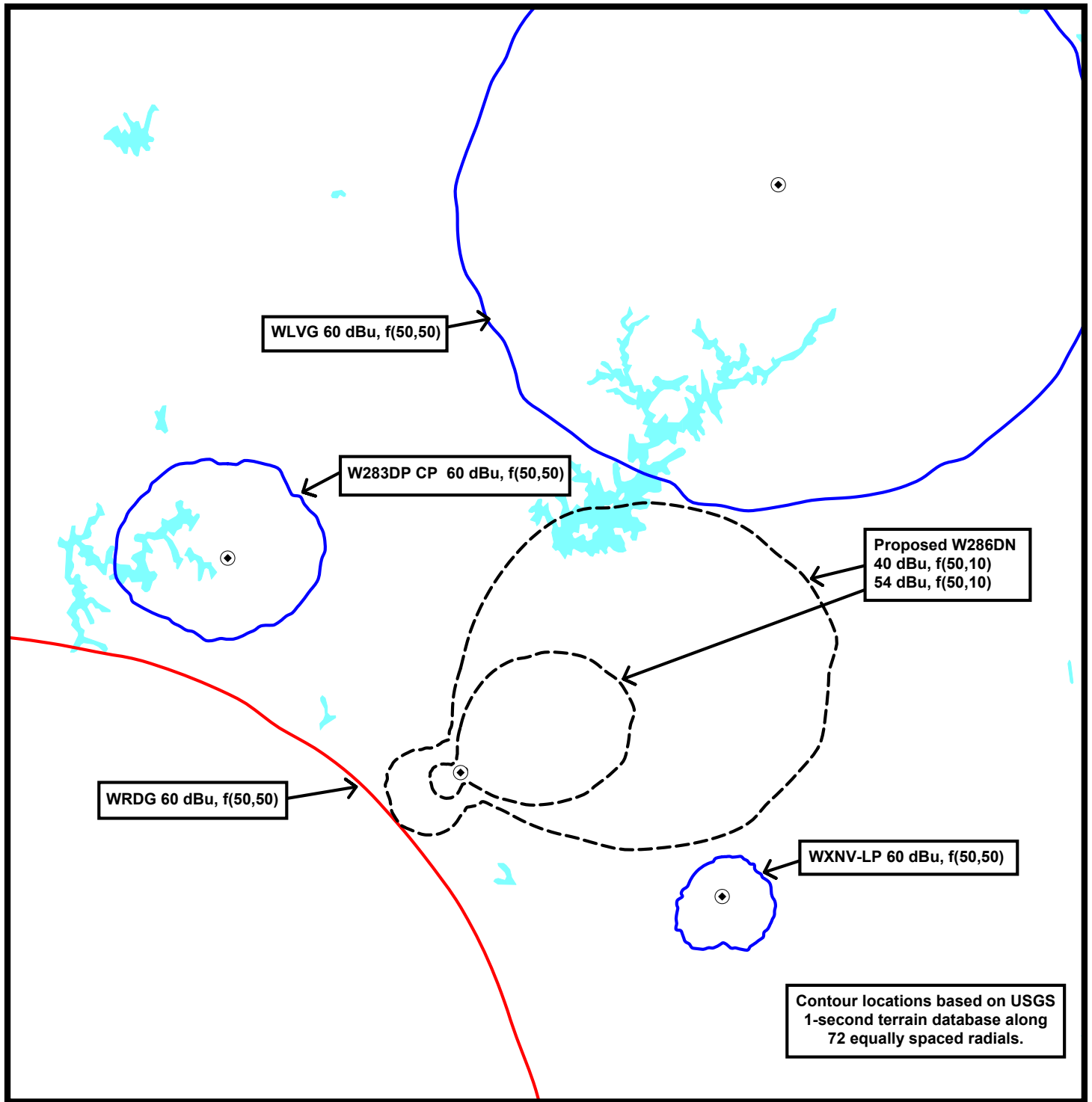
/1 Not an allocation issue.

/2 There will be overlap normally prohibited by Section 74.1204. 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 and Figure 4.

/3 Current W286DN authorization.

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

Figure 3



COMPLIANCE WITH SECTION 74.1204
FM TRANSLATOR STATION W286DN
DECATUR, GEORGIA
CH 286 (105.1MHZ) 0.135 KW (DA)

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

Figure 4

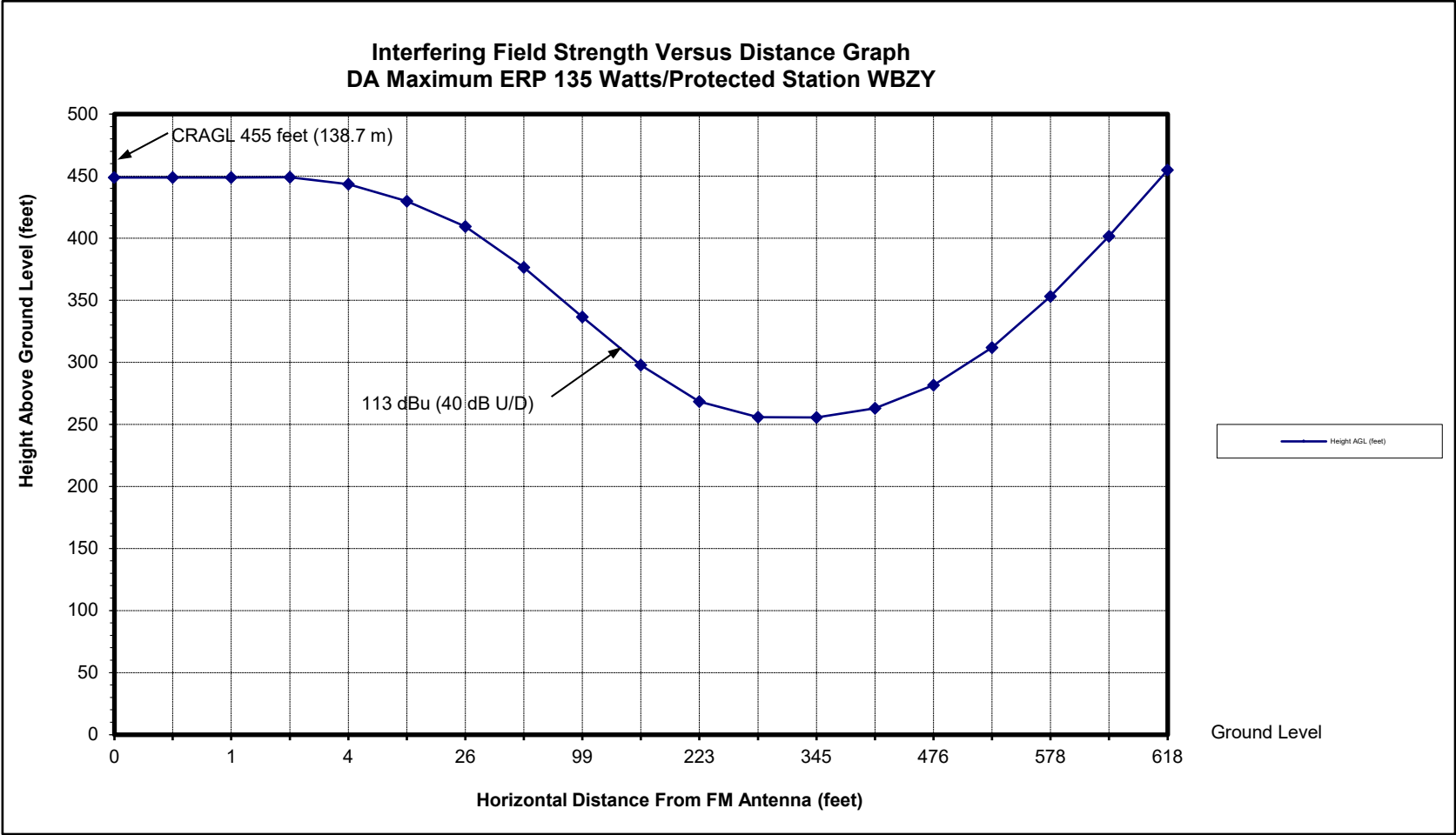


Figure 5

CL-FM/VRM/50N FM Log-Periodic Antenna
 Max Gain: 7.0 dBd
 Power-x: 5.0
 Vertical Polarization
 Vertical Plane Pattern



Angle	Field	Rel dB	PWR mult	dBd	Angle	Field	Rel dB	PWR mult	dBd
0	1.000	.00	5.01	7.00	-45	.360	-8.87	.65	-1.87
-1	.996	-.03	4.97	6.97	-46	.338	-9.42	.57	-2.42
-2	.992	-.07	4.93	6.93	-47	.316	-10.01	.50	-3.01
-3	.988	-.10	4.89	6.90	-48	.294	-10.63	.43	-3.63
-4	.984	-.14	4.85	6.86	-49	.272	-11.31	.37	-4.31
-5	.980	-.18	4.81	6.82	-50	.250	-12.04	.31	-5.04
-6	.974	-.23	4.75	6.77	-51	.231	-12.73	.27	-5.73
-7	.968	-.28	4.70	6.72	-52	.212	-13.47	.23	-6.47
-8	.962	-.34	4.64	6.66	-53	.193	-14.29	.19	-7.29
-9	.956	-.39	4.58	6.61	-54	.174	-15.19	.15	-8.19
-10	.950	-.45	4.52	6.55	-55	.155	-16.19	.12	-9.19
-11	.939	-.55	4.42	6.45	-56	.141	-17.02	.10	-10.02
-12	.928	-.65	4.32	6.35	-57	.127	-17.92	.08	-10.92
-13	.917	-.75	4.21	6.25	-58	.113	-18.94	.06	-11.94
-14	.906	-.86	4.11	6.14	-59	.099	-20.09	.05	-13.09
-15	.895	-.96	4.01	6.04	-60	.085	-21.41	.04	-14.41
-16	.880	-1.11	3.88	5.89	-61	.077	-22.27	.03	-15.27
-17	.865	-1.26	3.75	5.74	-62	.069	-23.22	.02	-16.22
-18	.850	-1.41	3.62	5.59	-63	.061	-24.29	.02	-17.29
-19	.835	-1.57	3.49	5.43	-64	.053	-25.51	.01	-18.51
-20	.820	-1.72	3.37	5.28	-65	.045	-26.94	.01	-19.94
-21	.803	-1.91	3.23	5.09	-66	.040	-27.96	.01	-20.96
-22	.786	-2.09	3.10	4.91	-67	.035	-29.12	.01	-22.12
-23	.769	-2.28	2.96	4.72	-68	.030	-30.46	.00	-23.46
-24	.752	-2.48	2.83	4.52	-69	.025	-32.04	.00	-25.04
-25	.735	-2.67	2.71	4.33	-70	.020	-33.98	.00	-26.98
-26	.717	-2.89	2.58	4.11	-71	.018	-34.89	.00	-27.89
-27	.699	-3.11	2.45	3.89	-72	.016	-35.92	.00	-28.92
-28	.681	-3.34	2.32	3.66	-73	.014	-37.08	.00	-30.08
-29	.663	-3.57	2.20	3.43	-74	.012	-38.42	.00	-31.42
-30	.645	-3.81	2.09	3.19	-75	.010	-40.00	.00	-33.00
-31	.628	-4.03	1.98	2.97	-76	.010	-40.00	.00	-33.00
-32	.612	-4.26	1.88	2.74	-77	.010	-40.00	.00	-33.00
-33	.596	-4.50	1.78	2.50	-78	.010	-40.00	.00	-33.00
-34	.579	-4.75	1.68	2.25	-79	.010	-40.00	.00	-33.00
-35	.562	-5.00	1.59	2.00	-80	.010	-40.00	.00	-33.00
-36	.544	-5.29	1.48	1.71	-81	.010	-40.00	.00	-33.00
-37	.526	-5.59	1.38	1.41	-82	.010	-40.00	.00	-33.00
-38	.507	-5.90	1.29	1.10	-83	.010	-40.00	.00	-33.00
-39	.488	-6.22	1.20	.78	-84	.010	-40.00	.00	-33.00
-40	.470	-6.56	1.11	.44	-85	.010	-40.00	.00	-33.00
-41	.448	-6.97	1.01	.03	-86	.010	-40.00	.00	-33.00
-42	.426	-7.41	.91	-.41	-87	.010	-40.00	.00	-33.00
-43	.404	-7.87	.82	-.87	-88	.010	-40.00	.00	-33.00
-44	.382	-8.36	.73	-1.36	-89	.010	-40.00	.00	-33.00