Exhibit 47

227 Central Avenue
Metuchen, NJ 08840-1242
(732) 494-6400 Phone
(732) 494-6401 Fax

Merrill Weiss Group LLC

Consultants in Electronic Media Technology/Management

Technical Statement for
GB Roanoke Licensing LLC

DTV Maximization Construction Permit:

WFXR
Channel 17
Roanoke, VA

Licensed in File No. BLCDT-20090609ABS

Introduction

This Technical Statement provides the supplemental technical data and information required for an application on FCC Form 301 "Application for Construction Permit for Commercial Broadcast Station" by GB Roanoke Licensing LLC ("Roanoke") for its digital television facilities at Roanoke, VA. Roanoke seeks a construction permit to fully maximize the facility of its digital television station, Station WFXR, on Channel 17. WFXR is licensed in File Number BLCDT-20090609ABS. The current application seeks to alter the antenna pattern and to increase the power of the WFXR facility. The planned changes coincide with moving the station's primary antenna from a side mount to a top mount, replacing the antenna for the discontinued analog service that currently occupies the top position on the station's tower. The current antenna for digital operation will remain in place and be relicensed for auxiliary use. This Technical Statement addresses the additional information required by Section III-D – DTV Engineering of the Form 301 application.

Facility

The changes proposed by the current application include an increase in power from 695 kW to 1000 kW ERP, an increase in antenna height from 594 meters HAAT to 613.5 meters HAAT, and a change in antenna pattern. In addition to 1000 kW horizontally polarized, the new antenna also will radiate 300 kW vertically polarized. These changes will result from replacement of the current side-mounted antenna with a top-mounted antenna that will be installed in place of the antenna used for analog service before the transition to digital television (DTV) service. The current side-mount antenna will remain on the tower and be licensed for auxiliary service. While the antenna on top of the tower is being replaced, the tower will be extended so that the tower plus appurtenances are just below 61 meters (200 feet) tall, thereby obviating the need for registering the tower or providing aircraft obstruction lighting. Full specifications for the proposed facility are provided below in Figure 1. A tower layout drawing is included herein in Figure 2, and an aerial photograph of the site at Poor Mountain, with the tower location identified, is included in Figure 3.

The contour map required by §73.625(b) is provided in Figure 4. In Figure 4, the Predicted Noise-Limited Contour (PNLC) of the current facility is shown in black. The PNLC of the proposed new facility is shown in purple. The contours were computed using a dipole-factor-corrected field strength threshold value of 39.04 dBu. Also shown in Figure 4 is the principal community contour at 48 dBu in blue and described in more detail below in the section on Principal Community Coverage.

The azimuth pattern of the horizontally-polarized radiation from the proposed antenna in relative field values is plotted in Figure 5a; the horizontally-polarized radiation pattern in dBk is plotted in Figure 5b; and tabulated data from which the plots in Figure 5 were derived is provided in Figure 6. The elevation pattern of the horizontally-polarized radiation from the proposed antenna in relative field values is plotted in Figure 7a; the horizontally-polarized elevation pattern in dBk is plotted in Figure 7b; and tabulated data representing a portion of the data from which the elevation plots of Figure 7 were derived is provided in Figure 8. Complete data for the azimuth and elevation patterns for both polarizations can be supplied upon request.

The combination of height above average terrain (HAAT) and effective radiated power (ERP) proposed for WFXR exceeds the maximum facilities permitted for UHF DTV operations under §73.622(f)(8)(i) of the Commission's rules. It is allowed, however, under §73.622(f)(5), which permits the combination of HAAT and ERP "up to that needed to provide the same geographic coverage area as the largest station within their market." The market has been defined by the Commission as the DMA in which a station is located.[1] WFXR is located in the Roanoke-Lynchburg DMA.

As noted in the First DTV Periodic Report and Order, "the geographical coverage determination is based on the area within the DTV station's noise-limited contour, calculated using predicted F(50,90) field strengths as set forth in section 73.622(e) of the rules and the procedure specified in section 73.625(b) of the rules."[2] The largest station in the Roanoke-Lynchburg DMA appears to be WDBJ, which is licensed on Channel 18 with an omnidirectional antenna at 675 kW and Height Above Average Terrain (HAAT) of 606 meters. Using the method of §73.625(b) (as implemented in the EDX SignalPro program[3]) and a field strength of 39.15 dBu for the contour, as determined using the dipole factor correction formula found in OET Bulletin No. 69 as referenced in §73.622(e), the PNLC of WDBJ encloses an area of 45,445.367 km^2. The PNLC of the proposed WFXR facility, determined using the same software and a dipole-factor-corrected field strength of 39.04 dBu for the contour, encloses an area of 43,187.758 km^2. Thus, the proposed WFXR facility does not exceed the geographic coverage of the largest station in its market and is permitted the proposed facilities under the provisions of §73.622(f)(5).

[1] See *Review of the Commission's Rules and Policies Affecting the Conversion to Digital Television*, MM Docket No. 00-39, Report and Order, 16 FCC Rcd 5946, 5973-4, ¶¶73-4 (2001) ("First DTV Periodic Report and Order").
[2] Id.
[3] The Fortran code in the SignalPro program was evaluated to confirm its conformance with the method defined in §73.625(b) of the rules, including computation of the HAAT from 3.2 – 16.1 km, use of the formula provided in the rule for determination of depression angle, application of the 90-percent field factor in determination of the consequent power value, and use of the Commission's TVFMFS Fortran code for contour distance determination. It was set to evaluate the contour distance on 1-degree-spaced radials, however, rather than at 45-degree-spaced headings.

Principal Community Coverage

As required by Section 73.625(a)(1), the DTV transmitter location must be chosen so as to put a minimum F(50,90) field strength of 48 dBu over the entire principal community to be served. Section 73.625(a)(2) further requires that "the location of the antenna must be so chosen that there is not a major obstruction in the path over the principal community to be served." As demonstrated by the 48-dBu contour on the coverage map of Figure 4, shown in purple, the transmitter location chosen, combined with the other characteristics of the transmission system, does deliver the minimum required field strength over the entire principal community to be served. Furthermore, a shadow study demonstrates that there is not a major obstruction in the path over Roanoke – the principal community.

Loss Area Calculation

As shown in Figure 4, there is one area where the contour of the proposed antenna pattern falls inside the contour of the currently licensed facility. That area is a small sliver roughly north of the transmitter site, on the far side of an intervening mountain, and in an adjacent market (Bluefield-Beckley-Oak Hill). Studies conducted of the region determined the total population within the shortfall area and the population within that area predicted to receive service from the current and proposed facilities when analyzed using the Longley-Rice terrain sensitive propagation model.

The crescent-shaped contour shortfall region to the north of the transmitter has an area of 158.056 km^2. It has a total population of 930 people. Using the Longley-Rice propagation model, 77 of those people are predicted to receive a signal having a field strength of 39.04 dBu or greater from the currently licensed facility. (39.04 dBu is the noise-limited field strength threshold on Channel 17 after dipole-factor correction.) Despite the contour shortfall, 77 people in the shortfall region remain predicted to receive a signal having a field strength of 39.04 dBu or greater from the proposed facility. Thus, there is no loss in actual service predicted using Longley-Rice methods, notwithstanding the apparent slight reduction in coverage shown by the contour location.

Thus, even though the contour method of comparing the currently licensed and proposed facilities shows a small loss of population (a total of 930 people, or 0.066 percent), the prediction of the terrain-based Longley-Rice propagation model is that there will be no loss of service to a single person in the contour shortfall area. At the same time, the Commission's TV_Process program shows a net gain of nearly 94,000 people receiving service. If the Longley-Rice analyses were ignored and only the total population within the contour shortfall area were considered, the loss would be *de minimis*, but the appropriate conclusion of the loss-area analysis is that there is no loss of service predicted to a single person and a net gain of nearly 94,000.

Interference to Other Stations

Since the proposal is to increase the power of the station, new interference studies were conducted to determine that adequate protection will be provided to all stations within the distances prescribed by the FCC rules. A version of the Commission's TV_Process program was used to perform the studies. The interference studies were conducted using a cell size of 1.0 km/side and Longley-Rice distance increments of 0.2 km. A summary of the studies is shown in Table 1. In the table, the channel, call sign, city of license, and application record number of each station studied are given in the left four columns. These are followed by the DTV baseline or Class A service contour population in the fifth column, the total population predicted to be impacted by interference with WFXR assumed to be operating with the parameters included in the Table of Allotments (Appendix B) in the sixth column, and the number of scenarios studied for each station in the seventh column. In the two columns on the right, the populations predicted to be impacted by additional interference with use of the proposed facilities are shown alongside the percent changes in population impacted from the Table of Allotment values.

The dashes shown on three rows indicate instances in which the TV_Process program reported that the "proposal causes no interference," meaning that there were no cells in its initial culling study that indicated interference. Similarly, there is one row containing plus signs, which indicate that the TV_Process program reported that the "proposed station is beyond the site to nearest cell evaluation distance," meaning that not even an

Table 1 – WFXR Interference Studies to Neighboring Stations Using FCC TV_Process Program

Chnl	Station	City	ARN	DTV Baseline / Service Pop	Appendix B Interference Population	Scen-arios	CP Interference Population	% Change
17	WNCN	Goldsboro, NC	BLCDT-20090612AIH	2,814,572	192,022	1	204,927	0.4921
17	WUNE-TV	Linville, NC	BLEDT-20091118ADR	1,383,997	53,525	2	59,613	0.4576
17	WDEM-CD	Columbus, OH	BLDTA-20090223ACT	—	—	—	—	—
17	WDEM-CD	Columbus, OH	BPDTA-20100222ABC	—	—	—	—	—
17	WQCW	Portsmouth, OH	BLCDT-20100422ABY	1,261,684	13,046	1	13,367	0.0257
17	WJMB-CD	Butler, PA	BDISDTL-20081124AAW	+	+	+	+	+
17	WLTX	Columbia, SC	BLCDT-20050701AAC	1,433,140	94,303	1	94,303	0.0000
17	WKOP-TV	Knoxville, TN	BLEDT-20040405ACC	1,238,315	5,759	2	6,679	0.0746
17	WKTD-CD	Portsmouth, VA	BLTTA-20050316ACC	—	—	—	—	—
17	WXOB-LP	Richmond, VA	BLTTA-20020809AAN	460,904	1,368	1	1,368	0.0000
18	WDBJ	Roanoke, VA	BLCDT-20090714AAW	1,390,422	17,368	1	17,743	0.0273

Note: Interference studies were conducted using cell size of 1.0 km/side and Longley-Rice distance increments of 0.2 km.

initial culling study was required. Thus, in these cases, no further examination was required, and the number of scenarios studied was zero. When multiple scenarios existed and TV_Process studied them, the worst-case population impact was selected for presentation in the table.

Table 1 summarizes eleven cases involving ten stations implicated in the power increase of WFXR and therefore requiring analysis. Four cases show that analysis beyond the initial culling study was unnecessary. Of the remaining seven, two show no predicted change in interference. The other five cases all report new predicted interference to populations smaller than the permitted 0.5 percent of the population not affected by terrain losses. Thus, there is no impermissible interference predicted for the proposed WFXR facility with its antenna pattern modified, its antenna moved to the top of the tower and its height increased, and its effective radiated power increased to 1000 kW.

Consideration of Class A Stations

The Commission's Rules specify protection to be afforded by full service stations to both analog and digital LPTV stations that have achieved Class A status.[4] For purposes of this application, the Commission's TV_Process program was used to locate any Class A stations that might be impacted by the power increase of WFXR. The TV_Process program discovered in the CDBS database contour overlap to one facility of one Class A station located in Richmond, VA (WXOB-LP). As shown in Table 1, further analysis of this facility using the Longley-Rice terrain-based method, as permitted in §73.616(f)(3), resulted in a report of zero change in predicted interference to the Class A station with the facilities changes proposed in the WFXR Form 301 application. Since §73.616(f)(3) permits use of the Longley-Rice methodology of OET Bulletin No. 69 to support a request for waiver of the contour overlap provisions of §73.616(f)(1) and (2), such a waiver hereby is requested based upon the results of application of the Longley-Rice methodology shown above.

[4] Section 73.623(c)(5), *Minimum technical criteria for modification of DTV allotments included in the initial DTV Table of Allotments and for applications filed pursuant to this section.*

International Coordination

The WFXR transmitter site is within neither the Canadian nor the Mexican coordination zones. Thus, no coordination with either country is required for this application.

Environmental Impact / Radio Frequency Radiation

The replacement antenna will be installed on an existing tower at an existing transmitter site that is adjacent to a group of other existing transmitter sites, and the tower will be extended to a height of less than 200 feet overall, including appurtenances. Therefore, none of the conditions of significant environmental effect specified in §1.1307(a) that would trigger the requirement for an Environmental Assessment (EA) exist.

With respect to Radio Frequency Radiation (RFR), the Maximum Permissible Exposure (MPE) limits in §1.1310 for both General Population/Uncontrolled Exposure and Occupational/Controlled Exposure are computed not to be exceeded in the area surrounding the tower, as determined using methods of OET Bulletin Number 65 and Supplement A thereto (Edition 97-01) and including both horizontally- and vertically-polarized components of the radiated signal. The maximum exposure in the area surrounding the tower is calculated to be 15.8 percent of the General Population/ Uncontrolled MPE and 3.2 percent of the Occupational/Controlled MPE. These values represent reductions to approximately one-third of the levels predicted for the antenna currently in use. Thus, the replacement antenna will result in significant reductions in the RFR to which both the public and workers are predicted to be exposed.

Given the predicted levels of RFR, the proposed facility is not categorically excluded from the making of measurements to confirm the radiation levels in the region around the tower. Measurements of the radiation levels are made on an occasional basis. In fact, recent measurements showed good correspondence between predicted and measured levels for the antenna currently in operation and little additional RF energy from other stations present in the locations of highest radiation both present from the current antenna and predicted for the replacement antenna. Thus, the evidence currently available indicates that the RFR does not and will not approach the maximum MPE values for General Population/Uncontrolled exposure, thereby making the Occupational/Controlled

MPE maximum value of no consequence. The station nonetheless has established a fenced area to keep the general population away from the tower, and signs are posted to warn of the danger of radiation.

Since the site of the proposed facility is adjacent to the facilities of other stations, GB Roanoke Licensing LLC will undertake to work cooperatively with the other spectrum users in the area to assure protection of workers when they must enter into areas with high radiation levels, such as when necessary to work on antennas and towers, and will reduce power or cease operations as necessary to assure the safety of such workers.

Notifications

The site at Poor Mountain is not in proximity to any of the government radio astronomy installations named in Section 73.1030, nor is it proximate to any of the named radio receiving locations. The nearest FCC monitoring station, furthermore, is over 360 km distant. Thus, none of the notifications mandated or recommended by Section 73.1030 is required in this instance.

Summary

The modification in antenna pattern, increase in antenna height, and increase in effective radiated power to 1000 kW of the WFXR facility has been shown not to exceed the service area of the largest facility in the market and also has been shown not to produce impermissible interference to any other station. Furthermore, the station is not in an international coordination zone. As a result, the WFXR application for a construction permit to make the modifications proposed herein should be immediately grantable.

Figure 1 — Technical Specifications — Proposed WFXR Facility
Channel 17 — Roanoke, VA

Frequency

Channel	17
Frequency Band	488 – 494 MHz
Center Frequency	491 MHz

Location

Site	20 km (12.4 miles) West Southwest of Roanoke, VA
Geographic Coordinates (NAD27)	37° 11’ 47.3” N 80° 09’ 15.5” W
Tower Registration (or FAA Study Number)	N/A

Elevation

Elevation of site above mean sea level	1138.1 m
Overall height of tower above site elevation	60.9 m
Overall height of tower above mean sea level	1199.0 m
Height of antenna radiation center above site elevation	53.9 m
Elevation of average terrain (45-degree spaced radials, 3.2-16.1 km)	578.5 m
Height of antenna radiation center above mean sea level	1192.0 m
Height of antenna radiation center above average terrain (HAAT)	613.5 m

Antenna

Manufacturer	Electronics Research, Inc. (ERI)
Model	ATW14HS4-ETCX-17S
Description	Top-Mounted UHF End-Fed Slot
Orientation (rotation around vertical axis)	0 degrees true
Electrical beamtilt	1.00°
Mechanical beamtilt	None
Polarization	Elliptical
Gain (peak of beam – 1.00° depression – horizontal polarization)	21.48 (13.32 dB)
Gain (in horizontal plane – 0° depression – horizontal polarization)	17.48 (12.42 dB)

Power

Effective radiated power (ERP) (main beam – 1.00° depression – Hpol)	1000 kW
Effective radiated power (ERP) (main beam – 1.00° depression – Vpol)	300 kW
Effective radiated power (ERP) (in horizontal plane – Hpol)	813.6 kW

WFXR-DT Channel 17 Roanoke, VA

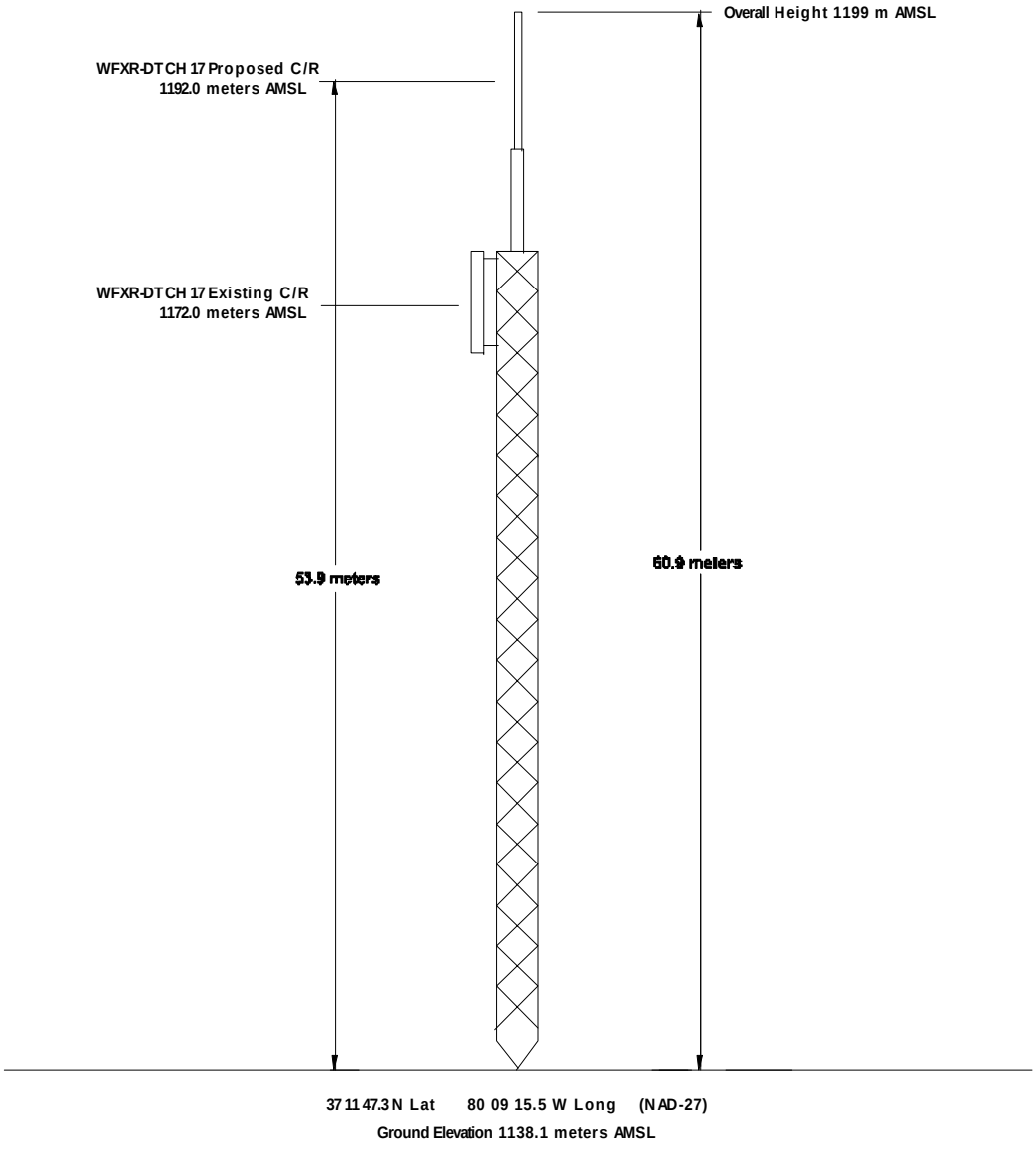

Figure 2
Not to Scale

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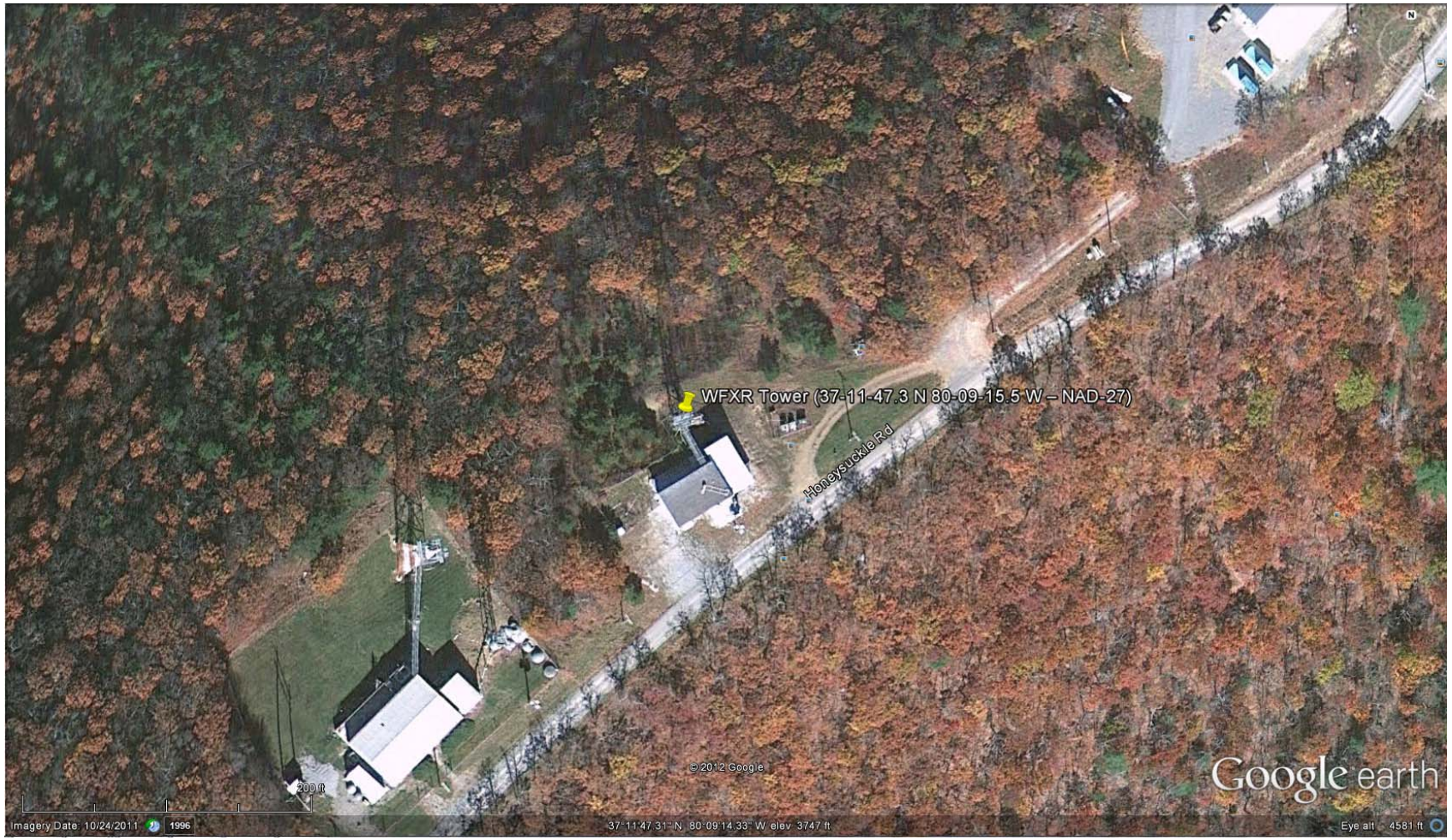

Figure 3 – WFXR Tower Site with Location & NAD-27 Coordinates of Tower Shown

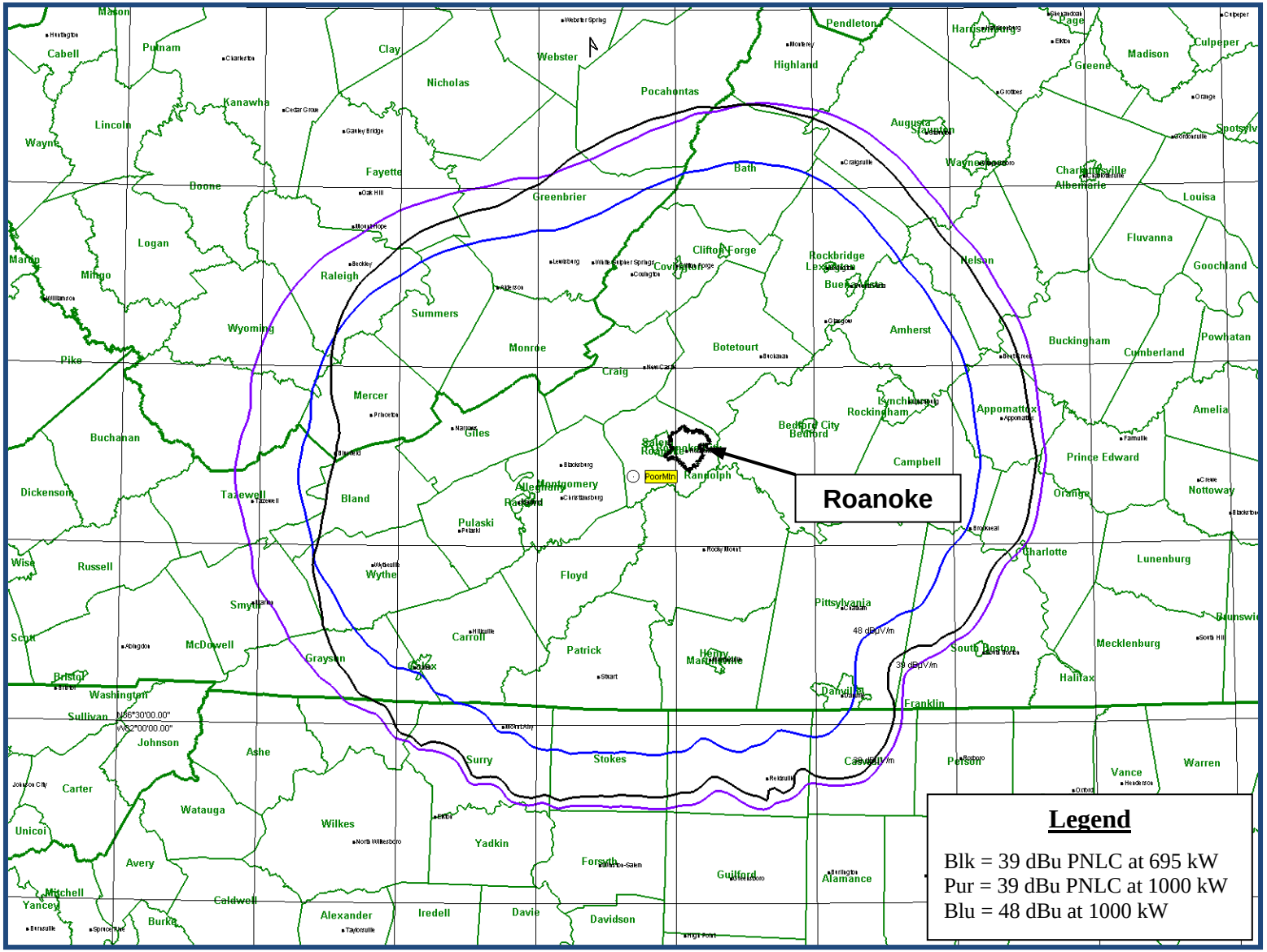

Figure 4 — 39-dBu Noise-Limited & 48-dBu Principal Community Contours of Proposed WFXR Facility and 39-dBu Noise-Limited Contour of Currently Licensed 695 kW WFXR Facility

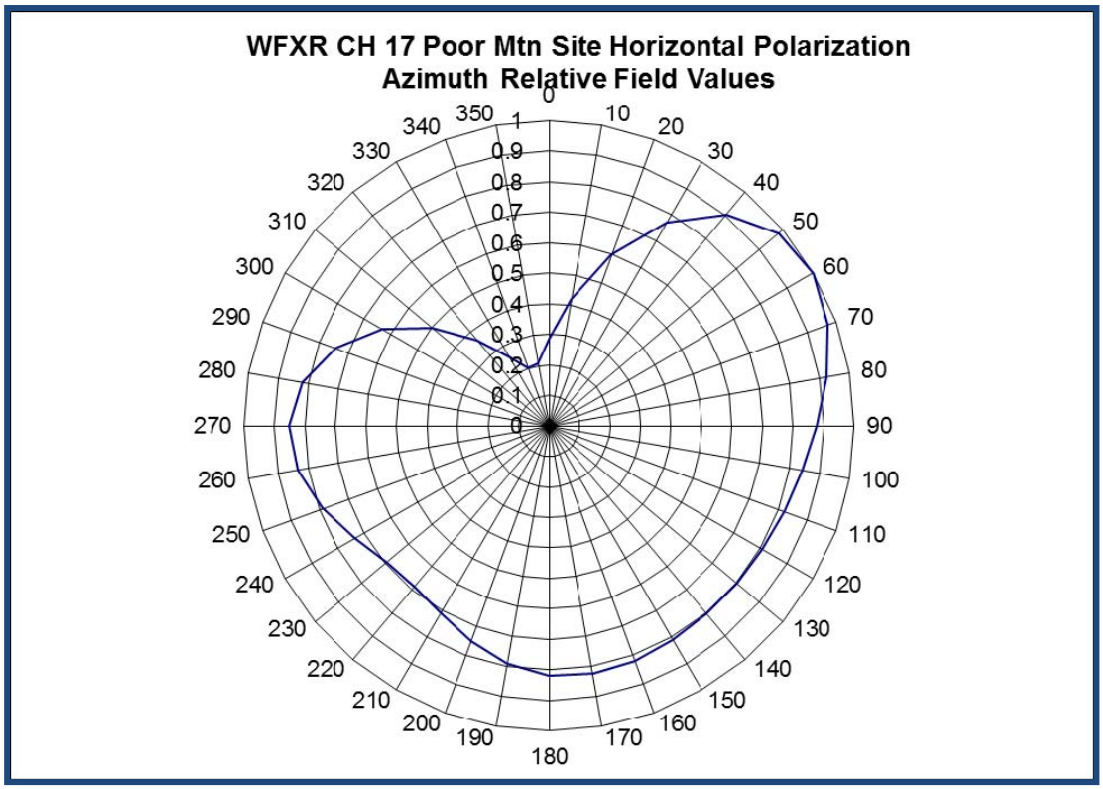

Figure 5a – WFXR Azimuth Relative Field Values – Horizontal Polarization

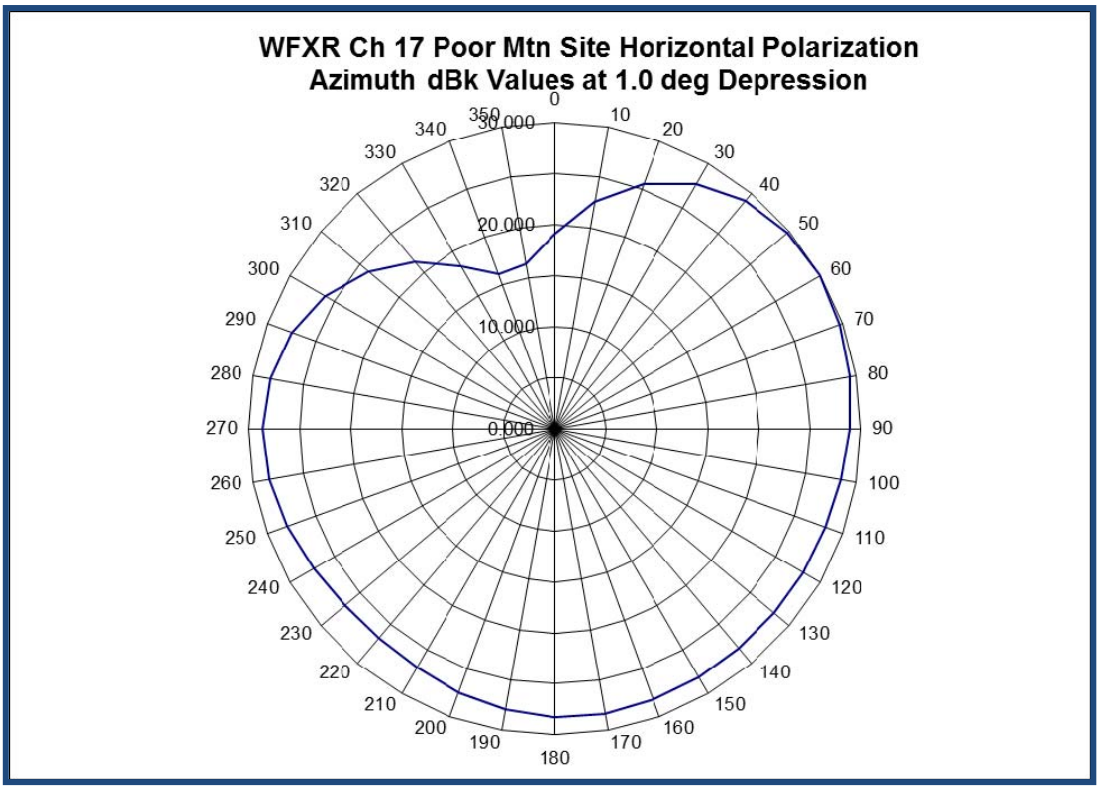

Figure 5b – WFXR Azimuth dBk Values – Horizontal Polarization

Figure 6 — WFXR Ch 17 Azimuthal Radiation Pattern Tabulated Values

Azimuth	Relative Field	Effective Radiated Power (dBk)	Azimuth	Relative Field	Effective Radiated Power (dBk)
0	0.285	19.097	190	0.792	27.969
10	0.423	22.526	200	0.751	27.516
20	0.596	25.507	210	0.711	27.037
30	0.768	27.712	220	0.689	26.762
40	0.903	29.117	min 223	0.688	26.752
50	0.982	29.841	230	0.697	26.863
max 57	1.000	30.000	240	0.736	27.339
max 60	1.000	30.000	250	0.790	27.947
70	0.973	29.761	260	0.836	28.443
80	0.924	29.318	max 268	0.852	28.609
90	0.877	28.861	270	0.851	28.598
100	0.842	28.505	280	0.822	28.295
110	0.820	28.274	290	0.745	27.446
120	0.808	28.145	300	0.632	26.020
130	0.803	28.090	310	0.498	23.953
140	0.804	28.101	320	0.368	21.307
150	0.811	28.177	330	0.261	18.327
160	0.820	28.274	340	0.202	16.125
170	0.826	28.337	min 344	0.195	15.801
180	0.818	28.252	350	0.208	16.380

Notes: Partial listing, derived from data supplied by manufacturer. Complete pattern data can be supplied upon request.
ERP in dBk at elevation having maximum radiation: 1.00 degrees depression

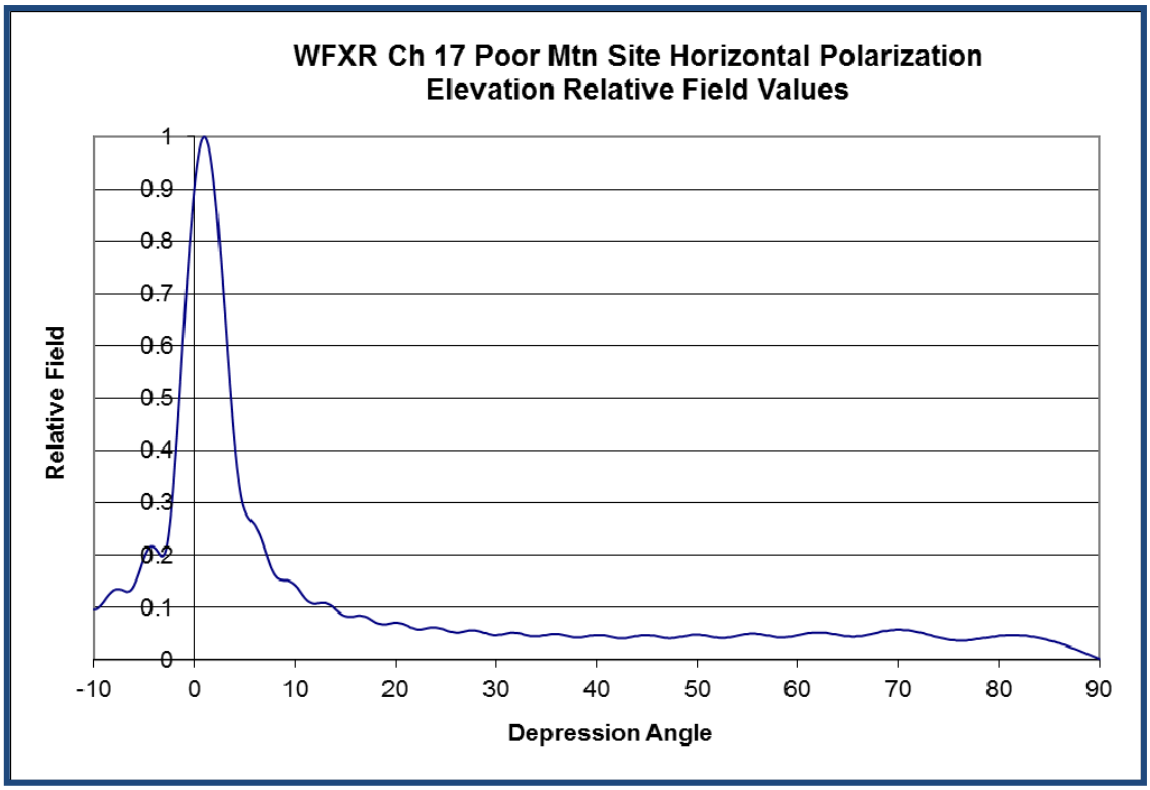

Figure 7a – WFXR Elevation Relative Field Values – Horizontal Polarization

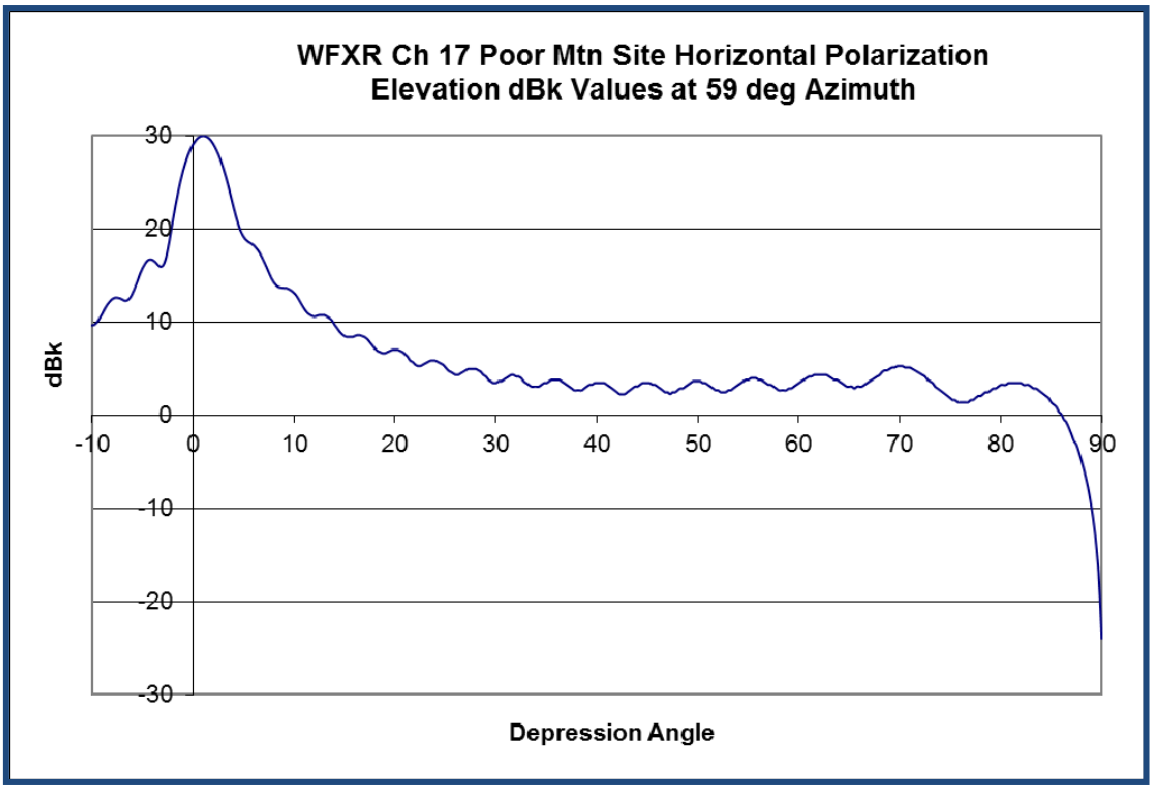

Figure 7b – WFXR Elevation dBk Values – Horizontal Polarization

Figure 8 — KEMO Site 1 Elevation Radiation Pattern Tabulated Values

Depression Angle	Relative Field	Effective Radiated Power (dBk)	Depression Angle	Relative Field	Effective Radiated Power (dBk)
-5.0	0.195	15.801	9.5	0.150	13.522
-4.5	0.214	16.608	10.0	0.143	13.107
-4.0	0.215	16.649	10.5	0.131	12.345
-3.5	0.203	16.150	11.0	0.118	11.438
-3.0	0.201	16.064	11.5	0.110	10.828
-2.5	0.248	17.889	12.0	0.107	10.588
-2.0	0.354	20.980	12.5	0.109	10.749
-1.5	0.495	23.892	13.0	0.109	10.749
-1.0	0.647	26.218	13.5	0.105	10.424
-0.5	0.788	27.931	14.0	0.097	9.735
0.0	0.902	29.104	14.5	0.089	8.988
0.5	0.975	29.780	15.0	0.084	8.486
1.0	1.000	30.000	15.5	0.083	8.382
1.5	0.975	29.780	16.0	0.084	8.486
2.0	0.903	29.114	16.5	0.085	8.588
2.5	0.795	28.007	17.0	0.083	8.382
3.0	0.665	26.456	17.5	0.078	7.842
3.5	0.532	24.518	18.0	0.072	7.147
4.0	0.414	22.340	18.5	0.069	6.777
4.5	0.331	20.397	19.0	0.068	6.650
5.0	0.287	19.158	19.5	0.070	6.902
5.5	0.269	18.595	20.0	0.071	7.025
6.0	0.258	18.232	20.5	0.070	6.902
6.5	0.239	17.568	21.0	0.067	6.521
7.0	0.212	16.527	21.5	0.062	5.848
7.5	0.184	15.296	22.0	0.059	5.417
8.0	0.163	14.244	22.5	0.058	5.269
8.5	0.154	13.750	23.0	0.060	5.563
9.0	0.152	13.637	23.5	0.062	5.848

Notes: Partial listing, derived from data supplied by manufacturer. Complete pattern data can be supplied upon request.

ERP in dBk at azimuth having maximum radiation: 59 degrees true