

TECHNICAL EXHIBIT
DIGITAL DISPLACEMENT RELIEF APPLICATION FOR
LOW POWER TV STATION WCPX-LP
FACILITY ID 53397
COLUMBUS, OHIO
CH 25 9.5 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of a digital displacement relief application for Low Power TV (LPTV) station WCPX-LP at Columbus, Ohio (Facility ID: 53397). Specifically, this application proposes to modify the WCPX-LP licensed operation by specifying digital operation on UHF channel 25 and operating with a different directional antenna.

Displacement Relief Eligibility

Station WCPX-LP is currently licensed to operate on NTSC channel 48 (674-680 MHz) with a directional antenna maximum ERP of 150 kW and an antenna RCAMSL of 379 meters. However, co-channel DTV station WPXI on channel 48 at Pittsburgh, Pennsylvania is located 261.3 kilometers from the WCPX-LP transmitter site, therefore WCPX-LP qualifies for displacement.

It is proposed to operate WCPX-LP on digital channel 25 from its licensed analog transmitter site and employ an ERI ALP8L2-HSPR-25 peanut type directional antenna. There is no proposed change in transmitter site, therefore there will be overlap of the current 74 dBu and proposed 51 dBu contours as detailed below. Based on current FCC policy, a displacement relief application specifying a site change of less than 48 kilometers (30 miles) and also involving protected contour overlap is considered permissible.

This application is considered a "minor change" in facilities pursuant to Section 73.3572, as it is a displacement relief application and the proposed 51 dBu contour will overlap a portion of the licensed 74 dBu contour (see Figure 1).

Proposed Operation

Station WCPX-LP proposes to operate on digital channel 25 (536-542 MHz) with an ERI model ALP8L2-HSPR-25 directional antenna, and a maximum directional ERP of 9.5 kW and an RCAMSL of 379 meters. The ERI directional antenna will be mounted at the 157 meter level on an existing 204.8 meter tower. The FCC Tower Registration Number for the existing structure is 1029036.

Response to Paragraph 13

A study has been conducted using the OET Bulletin 69 interference model.¹ The results indicate that the proposed operation will not create prohibited interference to stations in the Land Mobile Radio Service (LMRS) or other existing, authorized or proposed NTSC or DTV full-power, LPTV, TV translator or Class A stations.

Canadian Protection

The proposed channel 25 operation will be located 187 kilometers from the closest point of the US-Canadian common border. Since, there are no specific rules regarding digital low power stations along the common border, the rules regarding full power DTV stations were employed. Specifically, consideration was given to the existing US-Canadian TV Agreement (1994) and Letter of Understanding (LOU) between the FCC and Industry Canada related to DTV service along the common border (September 12, 2000). Pursuant to the existing Agreement and LOU, DTV stations will be referred if the pertinent interfering contour would fall within the territory of the other country. The pertinent interfering contour applicable towards co-channel NTSC stations is the 30.2 dBu, F(50,10) contour. The pertinent interfering contour applicable towards co-channel DTV operations is the 19.5 dBu, F(50,10) contour. Figure 2 depicts the locations of both the 19.5 dBu, F(50,10) and 30.2 dBu, F(50,10) interfering contours based on the proposed DTV channel 25 facilities. As indicated on Figure 2, neither the 19.5 dBu, F(50,10) nor the 30.2 dBu, F(50,10) contour overlaps Canadian land

¹The du Treil, Lundin & Rackley, Inc. DTV interference analysis program is based on the program and procedures outlined by the FCC in the Sixth Report and Order; subsequent Memorandum Opinion and Order; and FCC OET Bulletin No. 69. A nominal grid size resolution of 1 km was employed. An Alpha based processor computer system was employed. The results have been found to be in very close agreement with the results of the FCC implementation of OET Bulletin No. 69.

area. Therefore, it is not believed necessary to refer the proposal to Canada.

Response to Paragraph 14 - Environmental Protection Act

The proposed WCPX-LP facilities were evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OET Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation." The calculated power density at 2 meters above ground level at the base of the tower was calculated using the appropriate equation of the Bulletin. Figure 3 depicts the vertical pattern data for the proposed directional antenna. Using a conservative vertical relative field value of 0.3 at depression angles towards the tower base (-60° to -90° elevation), a maximum ERP of 9.5 kilowatts, the calculated power density at 2 meters above ground level at the base of the tower is 0.0012 milliwatts per square centimeter (mW/cm^2), or 0.33% percent of the Commission's recommended limit of $0.36 \text{ mW}/\text{cm}^2$ for TV channel 25 applicable to general population/uncontrolled exposure areas. Therefore, based on the responsibility threshold of 5%, the proposal will comply with the new RF emission rules.

Access to the transmitting site will be restricted and appropriately marked with warning signs. Furthermore, as this is a multi-user site, an agreement will be in place to ensure that appropriate measures will be taken to assure worker safety with respect to radio frequency radiation exposure. Such measures include reducing the average exposure by spreading out the work over a longer period of time, wearing "accepted" RFR protective clothing and/or RFR exposure monitors or scheduling work when the stations are at reduced power or shut down.

Finally, it is noted that this technical exhibit only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental

processing analysis will be or already has been provided to the
FCC by the tower owner as part of the tower registration process.

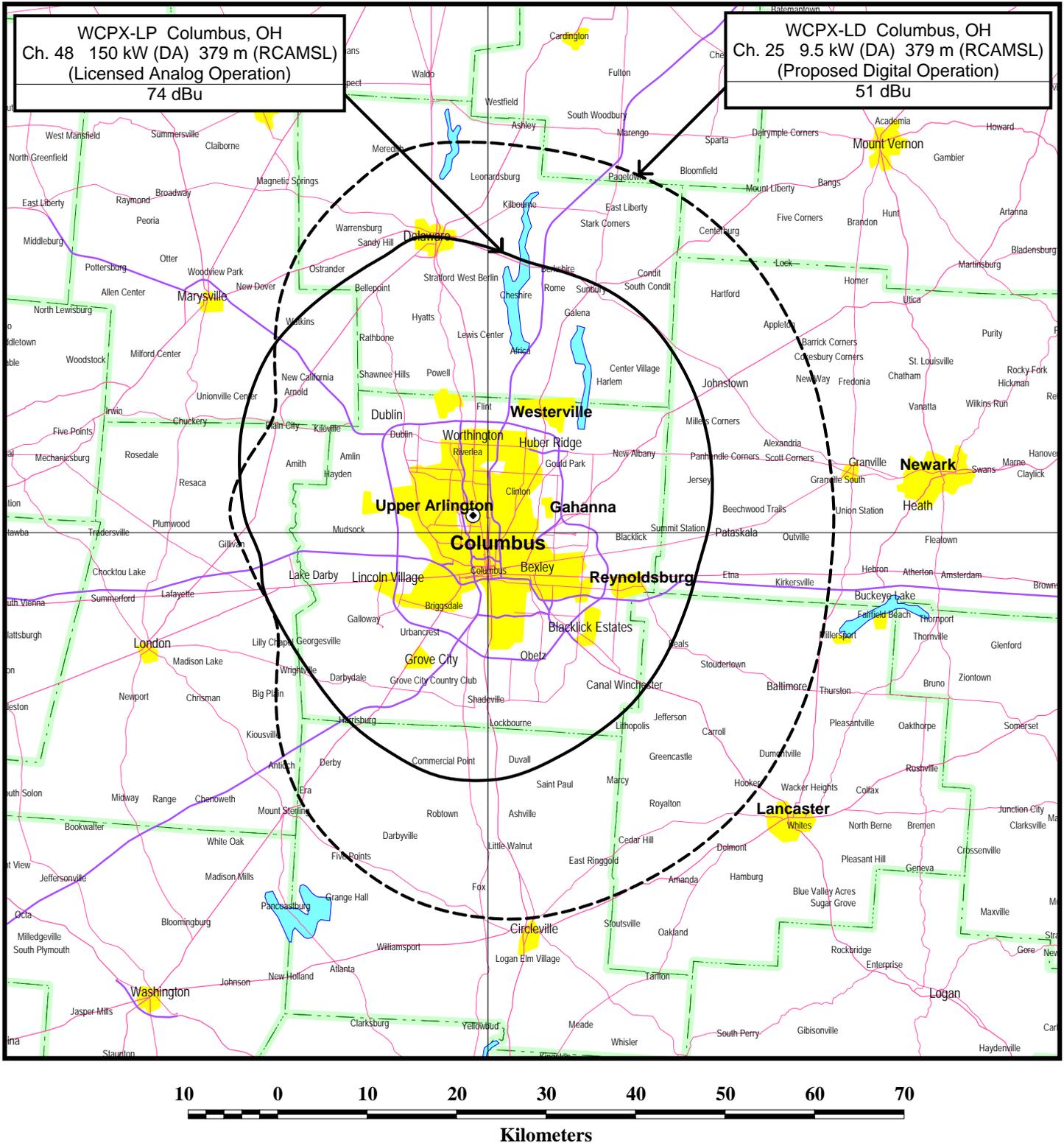


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Figure 1



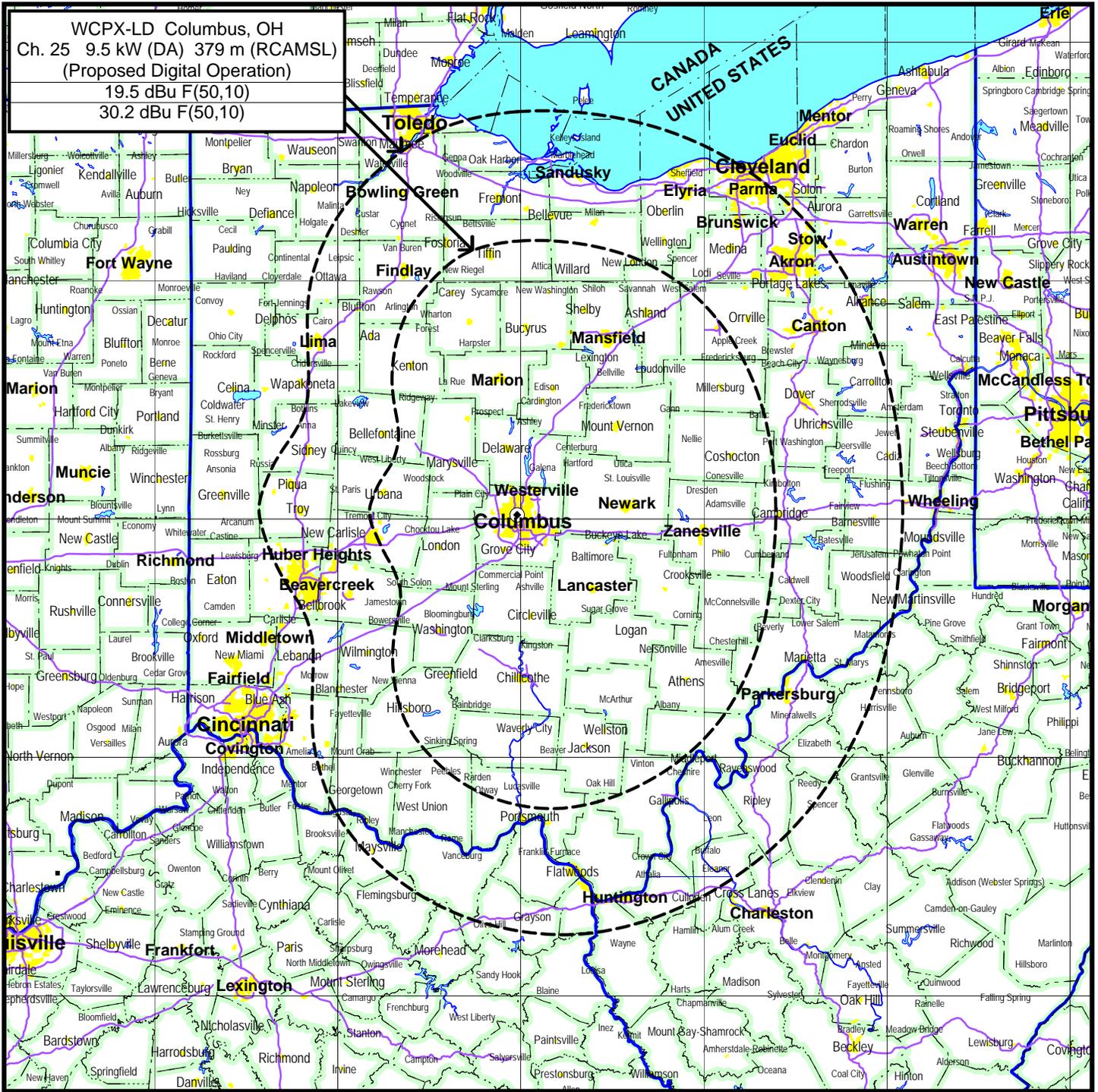
FCC PREDICTED COVERAGE CONTOURS

LPTV STATION WCPX-LP
COLUMBUS, OHIO

CH 25 9.5 KW (DA) 379 M (RCAMSL)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida 34237

Figure 2



CANADIAN PROTECTION

LPTV STATION WCPX-LP

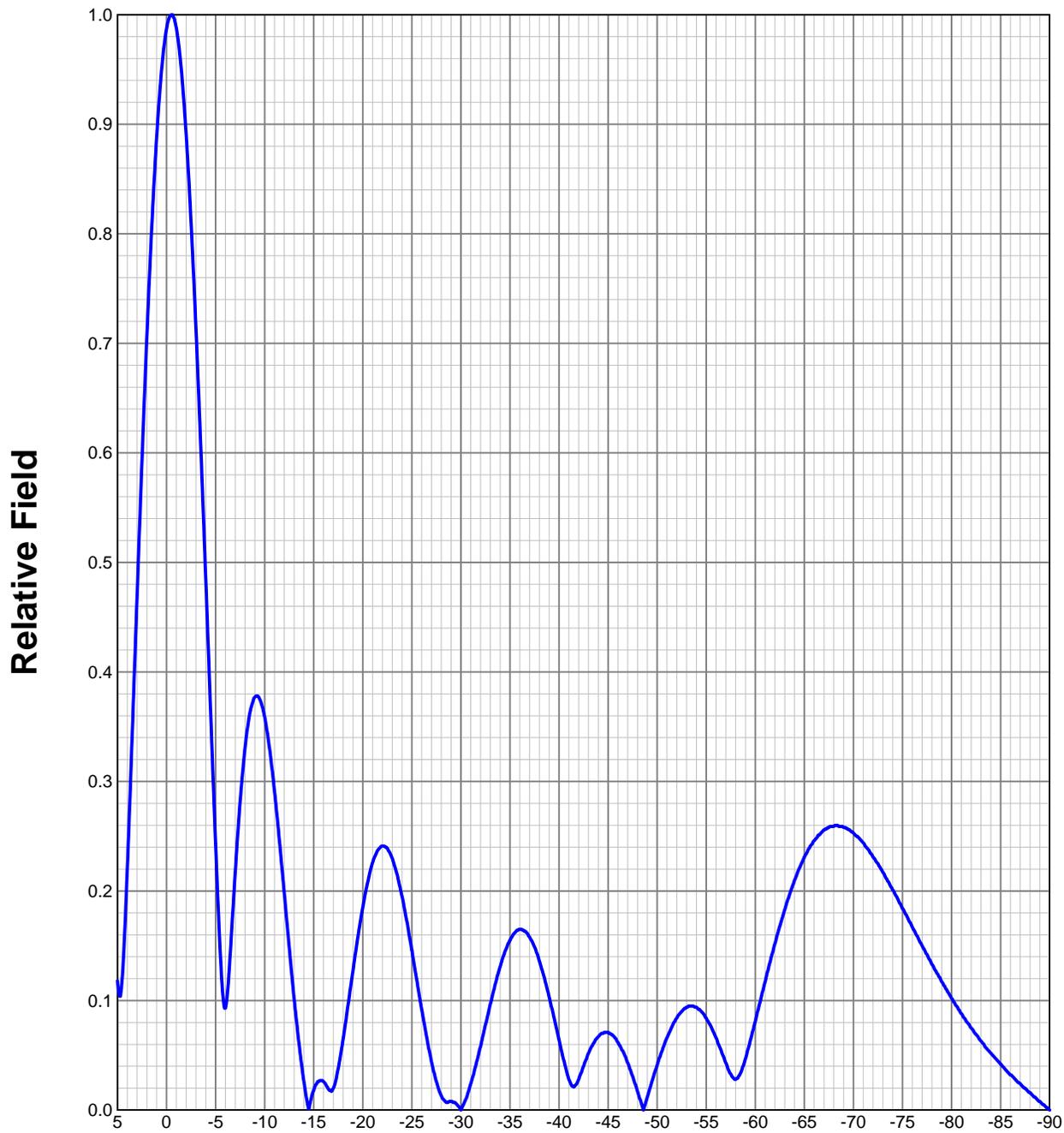
COLUMBUS, OHIO

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ELEVATION PATTERN

Type:	<u>ALP8L2</u>		Channel:	<u>25</u>
Directivity:	<u>Numeric</u>	<u>dBd</u>	Location:	<u></u>
Main Lobe:	<u>9.05</u>	<u>9.57</u>	Beam Tilt:	<u>-0.50</u>
Horizontal:	<u>8.82</u>	<u>9.45</u>	Polarization:	<u>Horizontal</u>



Preliminary, subject to final design and review.