

TECHNICAL EXHIBIT
DTV DISPLACEMENT APPLICATION FOR
LPTV STATION K25CH (FACILITY ID 69575)
CENTRALIA, WASHINGTON
CH 25(0) 6.1 KW-DA

Technical Narrative

This technical exhibit supports a digital television (DTV) displacement application for low power television (LPTV) station K25CH at North Bend, Washington. Station K25CH is currently licensed to operate on channel 25 with a Scala 4DR-8-2HW directional antenna system (BLTT-19930812IB, Facility ID 69575). The major lobe of the antenna pattern is oriented toward 45 degrees True (northeast). The maximum visual effective radiated power (ERP) is 6.31 kilowatts (kW). The antenna center of radiation is 1223 meters above mean sea level (AMSL). The transmitter site coordinates are 47-07-02, 121-53-30.

Proposed Facilities

Station K25CH is being displaced from its current operation by the co-channel KTWB DTV allotment and operation on channel 25 at Seattle, Washington. Station KTWB-DT is located only 63.7 kilometers north-northwest of the present K25CH site.

It is proposed to relocate K25CH on channel 25 to an existing tower near Centralia, Washington. The proposed K25CH site is 131 kilometers southwest of KTWB-DT. It is proposed to change the K25CH carrier offset to zero (0). The existing antenna system will be employed with the skew changed from 105 to 140 degrees. The proposed Scala 4DR-8-(S) antenna system will have major lobes toward 20 and 160 degrees True (see Figure 2). The antenna system will be installed with the center of radiation at 39 meters above ground level (AGL) and 480.1 meters AMSL (see Figure 1). The power gain for the proposed antenna system is 7.4. It is proposed to couple the antenna system to a 1 kW transmitter

through approximately 51.8 meters (170 feet) of Andrew HJ7-50A 1-5/8 inch air dielectric coaxial transmission line. The efficiency of the transmission line on channel 25 is 82.3%. The proposed maximum visual ERP will be 6.1 kW. The proposed transmitter site is on Crego Hill and the FCC Tower Registration Number is 1033564. The proposed transmitter site coordinates are 46-33-16, 123-03-26 (NAD-27).

NTSC Allocation Considerations

A study has been conducted using the provisions of Sections 74.705, 74.707 and 74.709 to assure that the proposal will not create prohibited interference with other authorized or pending analog (NTSC) full-power TV, LPTV and Class A TV stations. The proposed K25CH operation complies with the FCC's allocation standards with respect to domestic analog assignments.

Since the proposed K25CH site is 189 kilometers from the nearest point of the US/Canada border, consideration has been given to Canadian analog allotments on channels 17, 18, 20 through 30, 32, 33, 39 and 40. The only Canadian allotment requiring consideration is Class A channel 25(0) at Duncan, British Columbia. The Duncan channel 25(0) allotment is located 252.4 kilometers north of the proposed K25CH site. Figure 3 shows no overlap between the 25 kilometer protected circle for the Duncan allotment and the predicted 19 dBu F(50,10) interfering contour for the proposed K25CH operation.

DTV Allocation Considerations

Pertinent DTV allotments and assignments on channels 24, 25 and 26 have been examined using the procedures outlined in the FCC's OET-69 Bulletin.¹ Figure 4 shows the calculated interference caused by the proposed K25CH operation to pertinent DTV

¹ The duTreil, 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.

allotments and assignments. Except for the KTWB DTV allotment and proposed DTV operation, the proposed K25CH operation complies with the FCC's "de minimis" (0.5%) interference policy.

The amount of calculated interference caused by the proposed K25CH operation to the KTWB DTV allotment (0.96%) and proposed KTWB-DT operation (0.52%) is slightly in excess of the FCC's 0.5% de minimis standard. Station KTWB-DT and K25CH are commonly owned. As evidenced by an agreement attached elsewhere to this application, station KTWB-DT consents to the proposed K25CH operation and the interference it may cause to KTWB-DT service. If necessary, a waiver of the FCC rules is respectfully requested.

An examination of the Canada DTV allotment table indicates no allocation problems for the proposed K25CH operation.

The applicant recognizes the proposal is secondary to authorized full-service analog and DTV operations. The applicant understands that it must correct and/or eliminate prohibited interference that may result from its proposed operation. If necessary, a waiver of the FCC rules is respectfully requested based on use of the procedures outlined in the FCC's OET-69 Bulletin.

Radiofrequency Electromagnetic Field Exposure

The proposed K25CH facilities were evaluated in terms of potential radio frequency (RF) energy exposure at ground level to workers and the general public. A maximum visual ERP of 6.1 kW with 10% aural power was assumed. A conservative relative field value of 0.3 was assumed for the Scala directional antenna's downward radiation (see Figure 2). The calculated power density at a point 2 meters (6.6 feet) above ground level is 0.0067 mW/cm². This is less than 2% of the FCC's recommended limit of 0.36 mW/cm² for channel 25 for an "uncontrolled" environment. It is less than 1% of the FCC's recommended limit for a "controlled" environment.

Access to the transmitting site will be restricted and appropriately marked with warning signs. In the event that workers or other authorized personnel enter restricted areas or climb the tower, 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. The proposed K25CH operation appears to be otherwise categorically excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

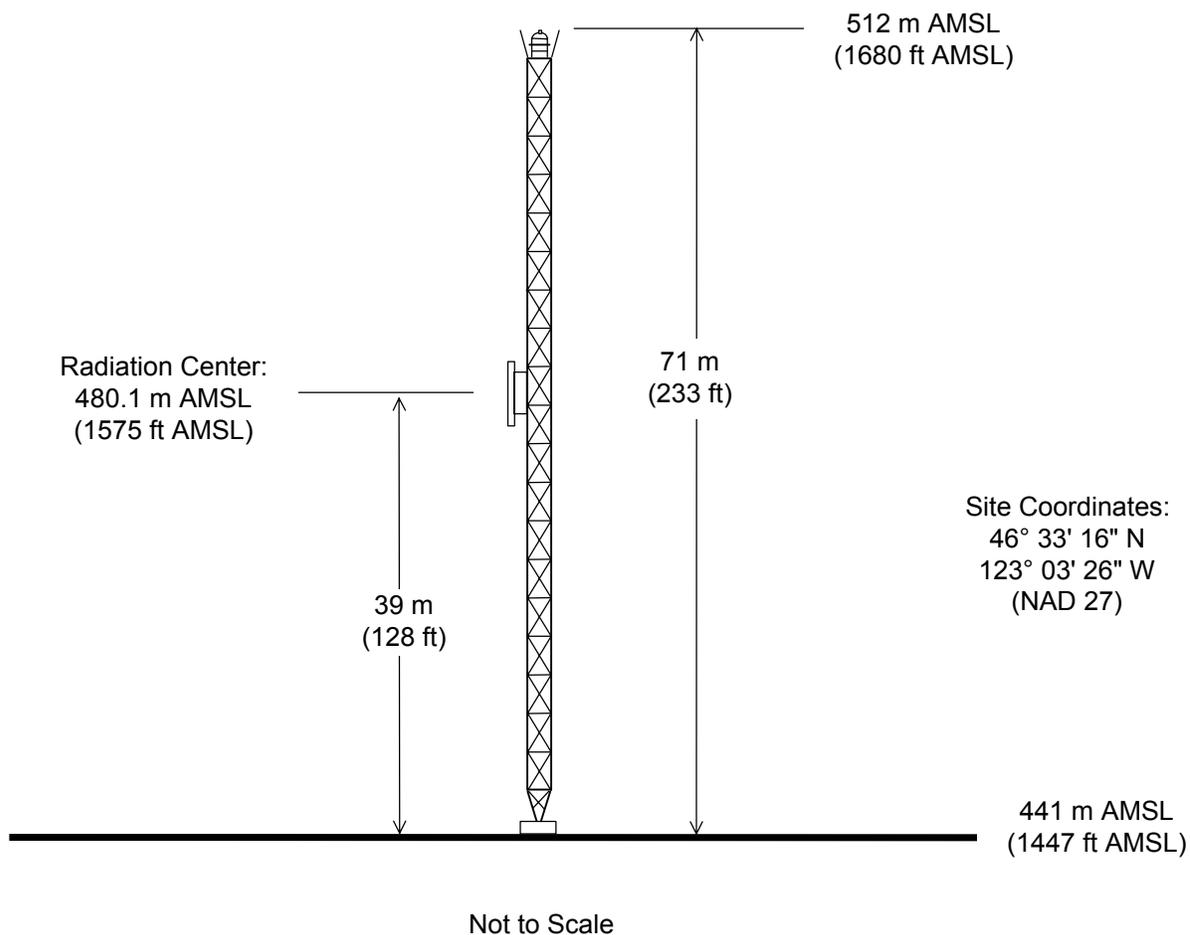
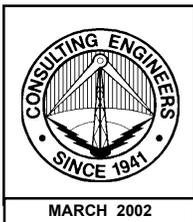
John A. Lundin

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March 27, 2002

Figure 1

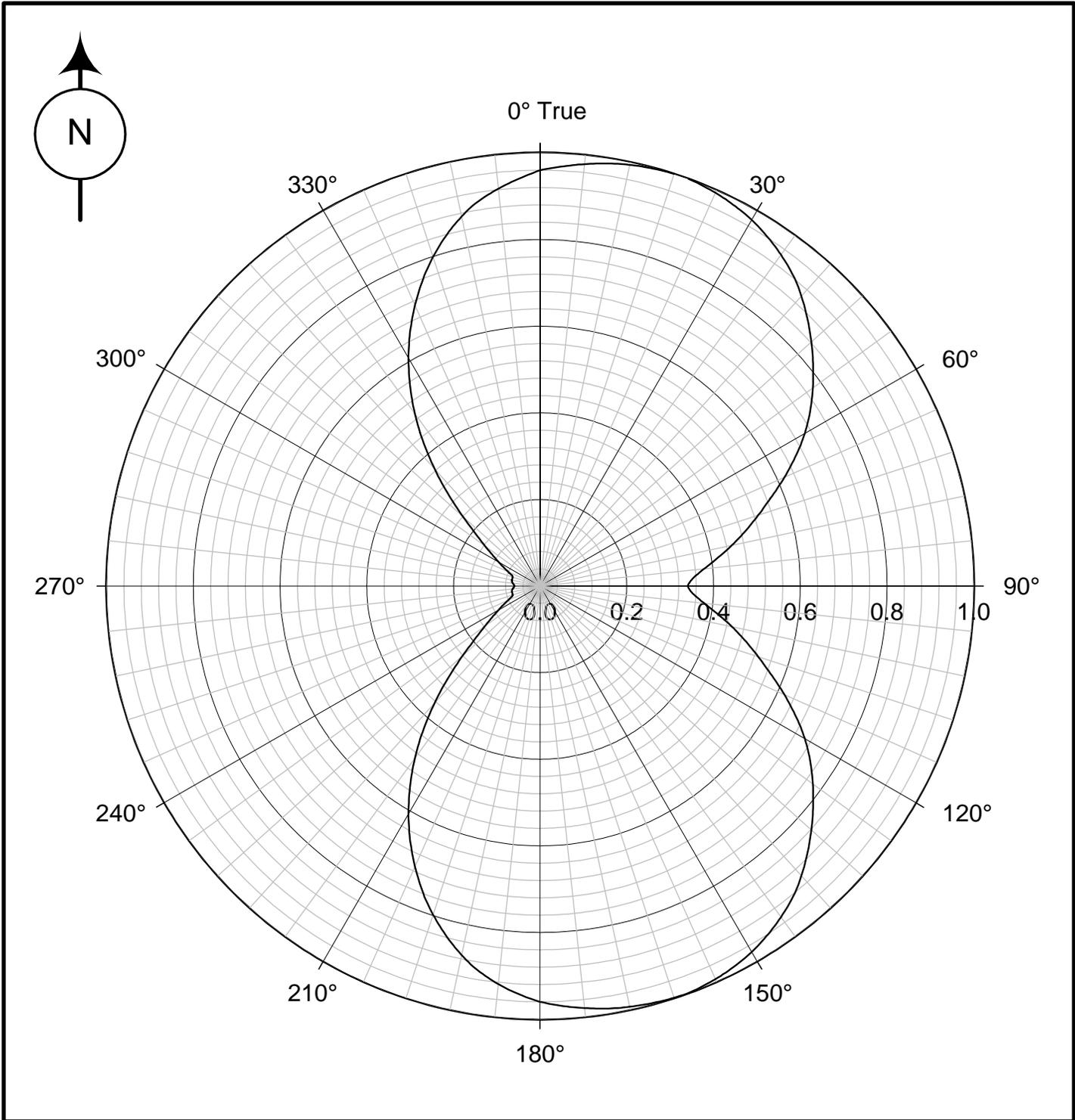
Tower Reg. No. 1033564



PROPOSED ANTENNA AND SUPPORTING STRUCTURE

STATION K25CH
CENTRALIA, WASHINGTON
CH 25 (Ø) 6.1 KW-DA

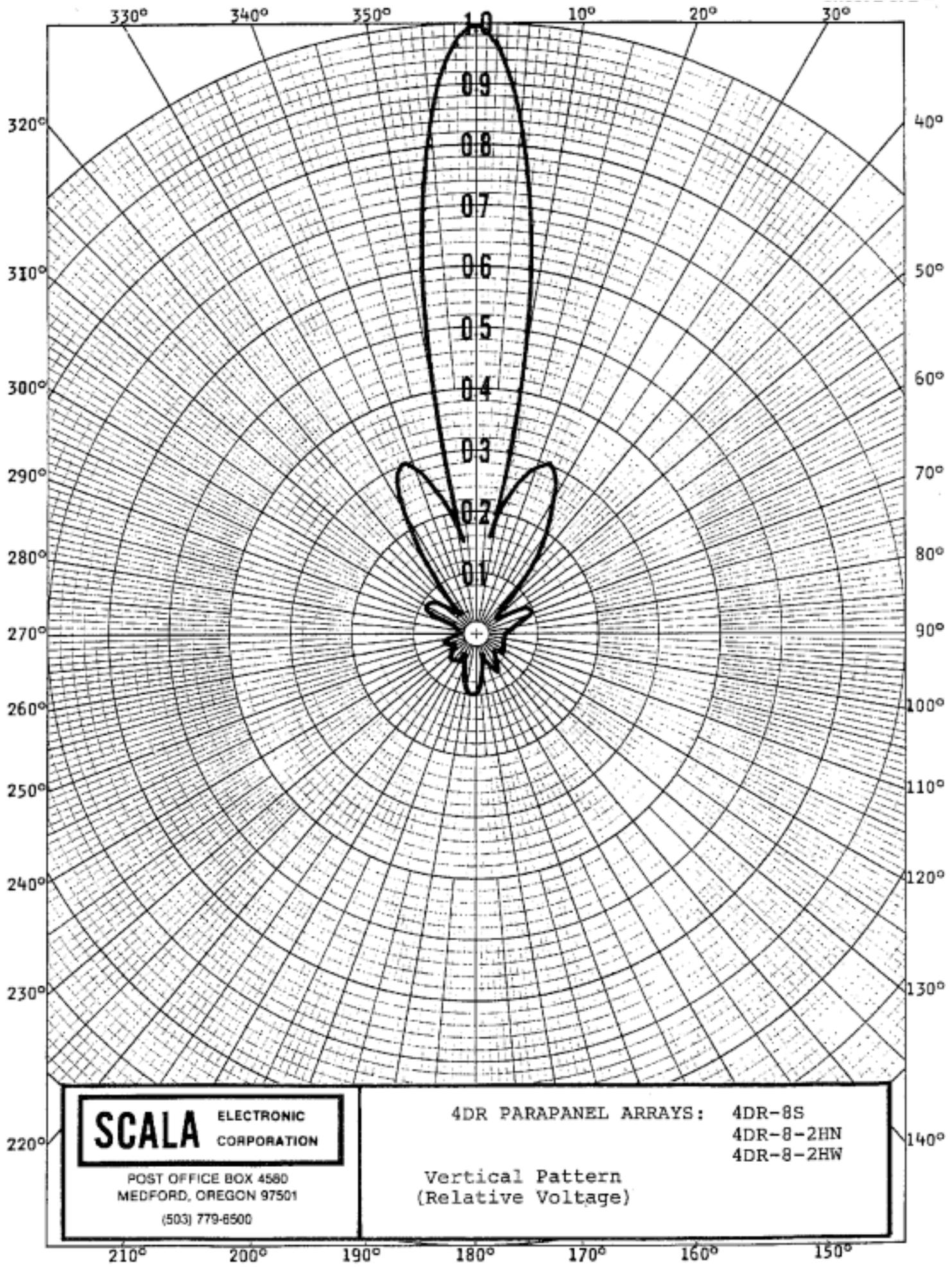
du Treil, Lundin & Rackley, Inc., Sarasota, Florida



HORIZONTAL PLANE RELATIVE FIELD PATTERN

STATION K25CH
CENTRALIA, WASHINGTON
CH 25 (Ø) 6.1 KW-DA

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

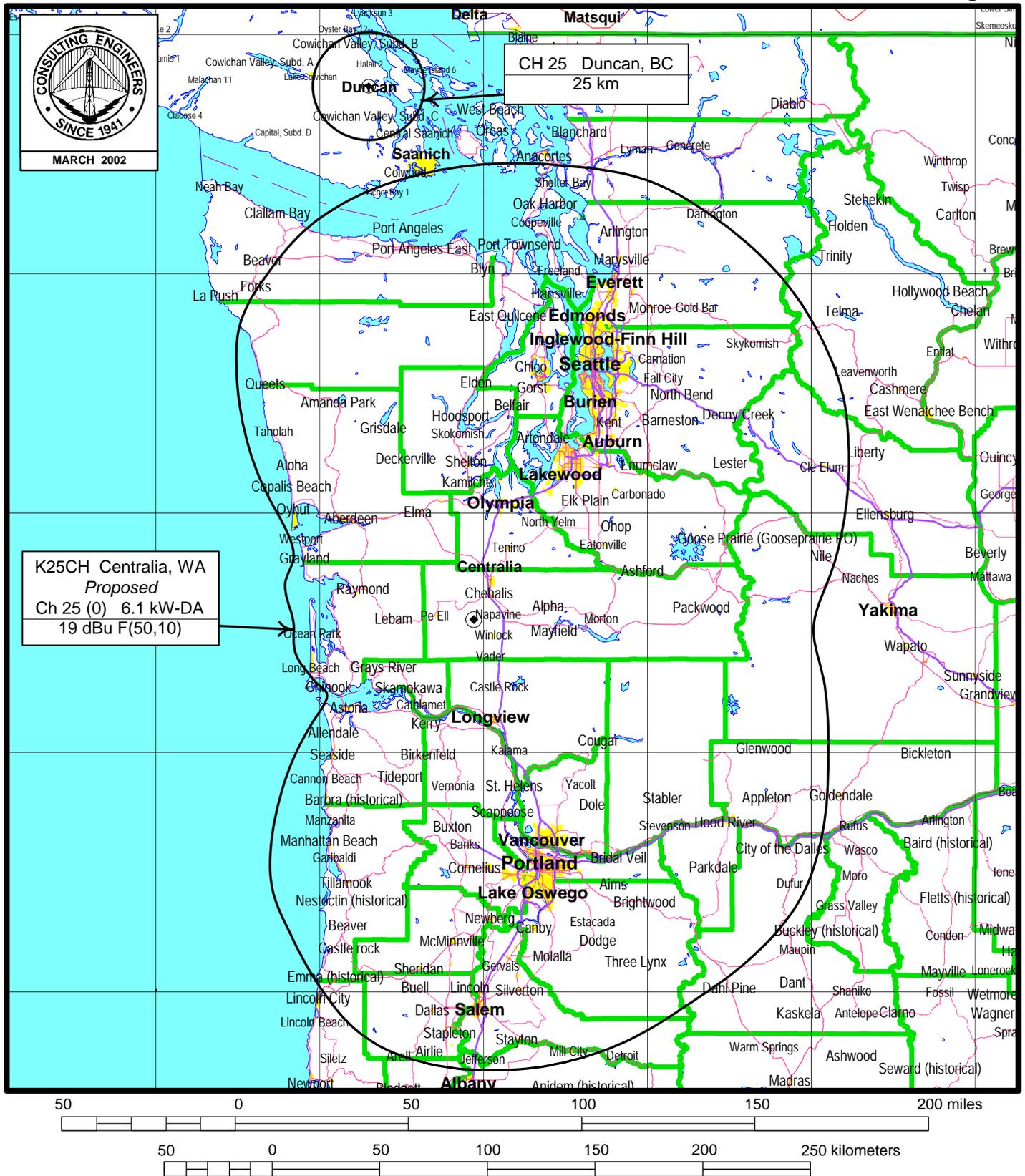


SCALA ELECTRONIC CORPORATION

POST OFFICE BOX 4580
MEDFORD, OREGON 97501
(503) 779-6500

4DR PARAPANEL ARRAYS: 4DR-8S
4DR-8-2HN
4DR-8-2HW

Vertical Pattern
(Relative Voltage)



CANADA ALLOCATION STUDY

STATION K25CH

CENTRALIA, WASHINGTON

CH 25 (0) 6.1 KW-DA

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

Study Date: 20020326
 Study Start: 15:58:24
INTERFERENCE CAUSED TO DTV ALLOTMENTS & ASSIGNMENTS FROM PROPOSED K25CH
 CELL SIZE : 1.00 km
 Using offset in determining thresholds
 Per 6th Report & Order and FCC OET-69 Bulletin

 KTWB-DT 47-36-57 122-18-26 25(N) 1000.0 kW 326.2 m AMSL 90.0 % 39.8 dBu
 SEATTLE WA 20306 2972 DTVSERVICE: 2972000 NTSCSERVICE: 2933000
 APP BPCDT-19991022ABF

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	30111.7 sq km	3089733
not affected by terrain losses	27165.5	3043819

 K25CH-P 46-33-16 123-03-26 25(Z) 6.1 kW-DA 480.1 m AMSL 10.0 % 72.8
 CENTRALIA WA

APPLICATION

0.96	0.99	1.00	0.98	0.92	0.82	0.70	0.56	0.43	0.34	0.43	0.56
0.70	0.82	0.92	0.98	1.00	0.99	0.96	0.89	0.77	0.61	0.41	0.20
0.11	0.07	0.07	0.06	0.07	0.07	0.11	0.20	0.41	0.61	0.77	0.89

Ref Az: 0.0
 Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	303.1 sq km	15774 (0.52%)

 DKTWB 47-36-57 122-18-26 25(0) 247.1 kW-DA 311 m AMSL 90.0 % 39.8 dBu
 SEATTLE WA 20306 2972 DTVSERVICE: 2972000 NTSCSERVICE: 2933000
 DTVALT DTV ALLOTMENT
 0.94 0.97 0.99 1.00 0.99 0.99 0.99 1.00 1.00 1.00 1.00 1.00
 1.00 1.00 1.00 0.99 0.98 0.96 0.95 0.98 1.00 1.00 0.99 0.98
 0.97 0.97 0.97 0.96 0.97 0.97 0.97 0.97 0.98 0.99 1.00 0.98
 (204.0 1.00) (205.0 1.00) (206.0 1.00) (207.0 1.00) (337.0 1.00)
 (338.0 1.00) (339.0 1.00)

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	21715.7 sq km	2991666
not affected by terrain losses	20175.9	2969412

K25CH-P 46-33-16 123-03-26 25(Z) 6.1 kW-DA 480.1 m AMSL 10.0 % 72.8
 CENTRALIA WA

APPLICATION

0.96	0.99	1.00	0.98	0.92	0.82	0.70	0.56	0.43	0.34	0.43	0.56
0.70	0.82	0.92	0.98	1.00	0.99	0.96	0.89	0.77	0.61	0.41	0.20
0.11	0.07	0.07	0.06	0.07	0.07	0.11	0.20	0.41	0.61	0.77	0.89

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	168.8 sq km	28652 (0.96%)

KVAL-DT 44-00-07 123-06-53 25(N) 1000.0 kW 607 m AMSL 90.0 % 39.8 dBu
 EUGENE OR 27781 593 DTVSERVICE: 593000 NTSCSERVICE: 519000

CP MOD BMPCDT-20000427ABM

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	37618.6 sq km	778063
not affected by terrain losses	29138.5	677155

K25CH-P 46-33-16 123-03-26 25(Z) 6.1 kW-DA 480.1 m AMSL 10.0 % 72.8
 CENTRALIA WA

APPLICATION

0.96	0.99	1.00	0.98	0.92	0.82	0.70	0.56	0.43	0.34	0.43	0.56
0.70	0.82	0.92	0.98	1.00	0.99	0.96	0.89	0.77	0.61	0.41	0.20
0.11	0.07	0.07	0.06	0.07	0.07	0.11	0.20	0.41	0.61	0.77	0.89

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	9.9 sq km	172 (0.03%)

DKVAL 44-00-07 123-06-53 25(0) 629.7 kW-DA 640 m AMSL 90.0 % 39.8 dBu
EUGENE OR 27781 593 DTVSERVICE: 593000 NTSCSERVICE: 519000

DTVALT DTV ALLOTMENT

1.00	1.00	1.00	1.00	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99
0.99	0.99	0.99	0.99	0.98	0.97	0.98	0.97	0.98	0.98	0.99	0.99
0.99	0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	36357.4 sq km	769458
not affected by terrain losses	27928.1	663413

K25CH-P 46-33-16 123-03-26 25(Z) 6.1 kW-DA 480.1 m AMSL 10.0 % 72.8
CENTRALIA WA

APPLICATION

0.96	0.99	1.00	0.98	0.92	0.82	0.70	0.56	0.43	0.34	0.43	0.56
0.70	0.82	0.92	0.98	1.00	0.99	0.96	0.89	0.77	0.61	0.41	0.20
0.11	0.07	0.07	0.06	0.07	0.07	0.11	0.20	0.41	0.61	0.77	0.89

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00 dB

	Area	Pop
Interference	12.8 sq km	2283 (0.38%)

Study end time: 16:04:22