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Engineering Statement
Modification Application for K38DT Sunriver, OR
For Operation on Channel 38+
June 2005

This Engineering Statement has been prepared on behalf of Rural Oregon Wireless Television, licensee of TV translator station K38DT. This material has been prepared in connection with a minor modification application for this facility. Operation is proposed with a modified antenna pattern and ERP on Channel 38+.

I. Allocation Study

Cochannel

Study has been made of all cochannel operations within 400 km of the proposed Ch. 38+ operation. There will be no prohibited contour overlap with any authorized cochannel analog or digital facilities close enough to require detailed study.

First-Adjacent

The attached allocation study map demonstrates that there will be no prohibited contour overlap with any authorized first-adjacent-channel facilities close enough to require detailed study.

N+7

There are no analog television stations on Channel 45 within 100 km of the proposed translator.

N-14 and N-15

There are no existing N-14 or N-15 operations close enough to require detailed study, with the exception of K23FS Sunriver.

Were the instant K38DT application to be considered in isolation, analysis would show that the proposed K38DT operation would increase interference caused to the licensed operation of K23FS. However, it should be noted that the instant application is being filed concurrently with an application by Fisher Broadcasting to modify the power and antenna pattern of K23FS.

The purpose of the K23FS and K38DT applications is to implement a new common antenna system to be shared by these stations, along with other TV translator stations operated by Rural Oregon Wireless Television. ROWT is an Oregon nonprofit corporation. The primary purpose of ROWT, as stated in its bylaws, is to provide television translator services to areas of Oregon and Washington which would not otherwise receive television transmissions. All of the corporate entities which operate full-power television stations in the Portland DMA are members of ROWT, and contribute funds towards ROWT's activities. This includes Fisher, the licensee of K23FS.

Therefore, and despite the fact that the instant K38DT application would be predicted to cause interference to the licensed operation of K23FS, Fisher has expressed (in its concurrently-filed K23FS application) its consent to the grant of the K38DT application. To the extent necessary, Fisher has consented to the receipt of such interference, in light of the fact that the interference will ultimately be eliminated by operation of K23FS and K38DT at the same power and via the same antenna system.

Based on the foregoing allocation and interference study, it is believed that the proposed Ch. 38+ facility can operate without risk of interference to other stations.

II. NIER Study

OET Bulletin 65 Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields (Edition 97-01) states in part that:

When performing an evaluation for compliance with the FCC's RF guidelines all significant contributors to the ambient RF environment should be considered. . . For purposes of such consideration, significance can be taken to mean any transmitter producing more than 5% of the applicable exposure limit (in terms of power density or the square of the electric or magnetic field strength) at accessible locations.

As will be demonstrated below, the proposed translator operation will produce less than 5% of the applicable exposure limit for both controlled environments such as this one. Thus, the proposed facility is categorically excluded from the requirement of further study. Therefore, pursuant to §1.1307(b)(3) of the Commission's Rules no calculations are required for the other FM and TV facilities in the vicinity, and precise calculations are made only with regard to the levels from this proposal.

Power density levels produced by the proposed translator were calculated for an elevation of 2 meters above ground (6 meters below the antenna radiation center). The worst case power density levels occur at depression angles between 45 and 90 degrees below the horizontal. The calculations in this report assume a worst-case relative field value of 0.14 at these angles, based on the manufacturer's vertical plane pattern for the horizontally-polarized Kathrein K723147 broadband panel antenna array (2-level) proposed in this application. This relative field value yields a worst-case adjusted peak effective radiated power of 24 Watts at depression angles between 45 and 90 degrees below the horizontal. Assuming an average effective radiated power of 12 Watts, and the shortest distance between the antenna radiation center and 2 meters above ground level (i.e. straight down), the highest calculated power density from the proposed antenna alone occurs at the base of the antenna support structure. At this point the power density is calculated to be $2.4 \mu\text{W}/\text{cm}^2$, which is 0.6% of $410 \mu\text{W}/\text{cm}^2$ (the FCC maximum at the Channel 38 visual carrier frequency for uncontrolled environments).

These calculations show that the maximum calculated power density produced at two meters above ground level by the proposed translator operation alone is less than 5% of the applicable FCC exposure limit at all locations between 1 and 1000 meters from the base of the antenna support structure. Section 1.1307(b)(3) of the Commission's Rules excludes applications for new facilities or modifications to existing facilities from the requirement of preparing an environmental assessment when the calculated emissions from the applicants proposed facility are predicted to be less than 5% of the applicable FCC exposure limit. Therefore, the proposed facility is in

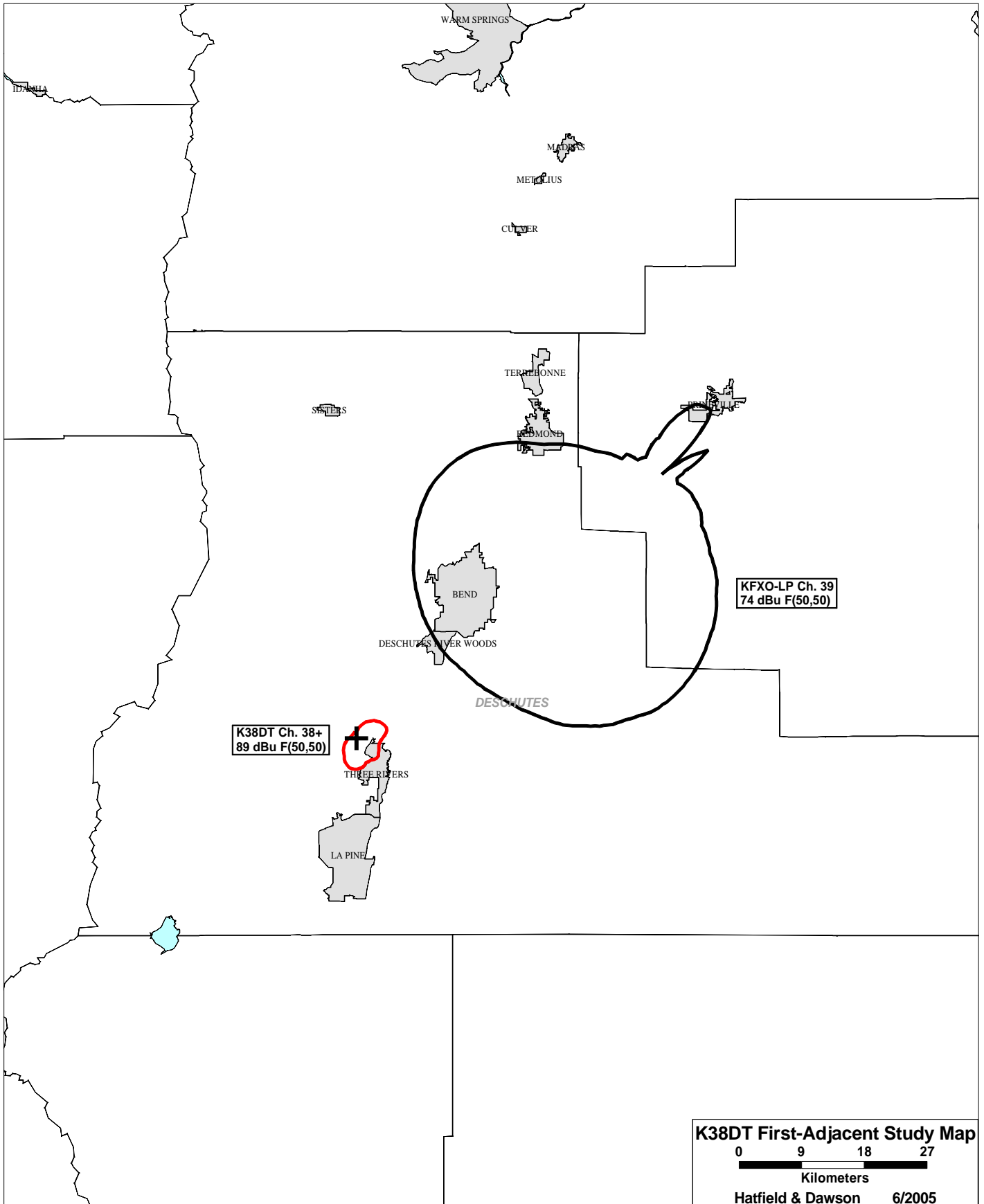
compliance with Section 1.1301 et seq and no further analysis of non-ionizing radiation at this site is required in this application.

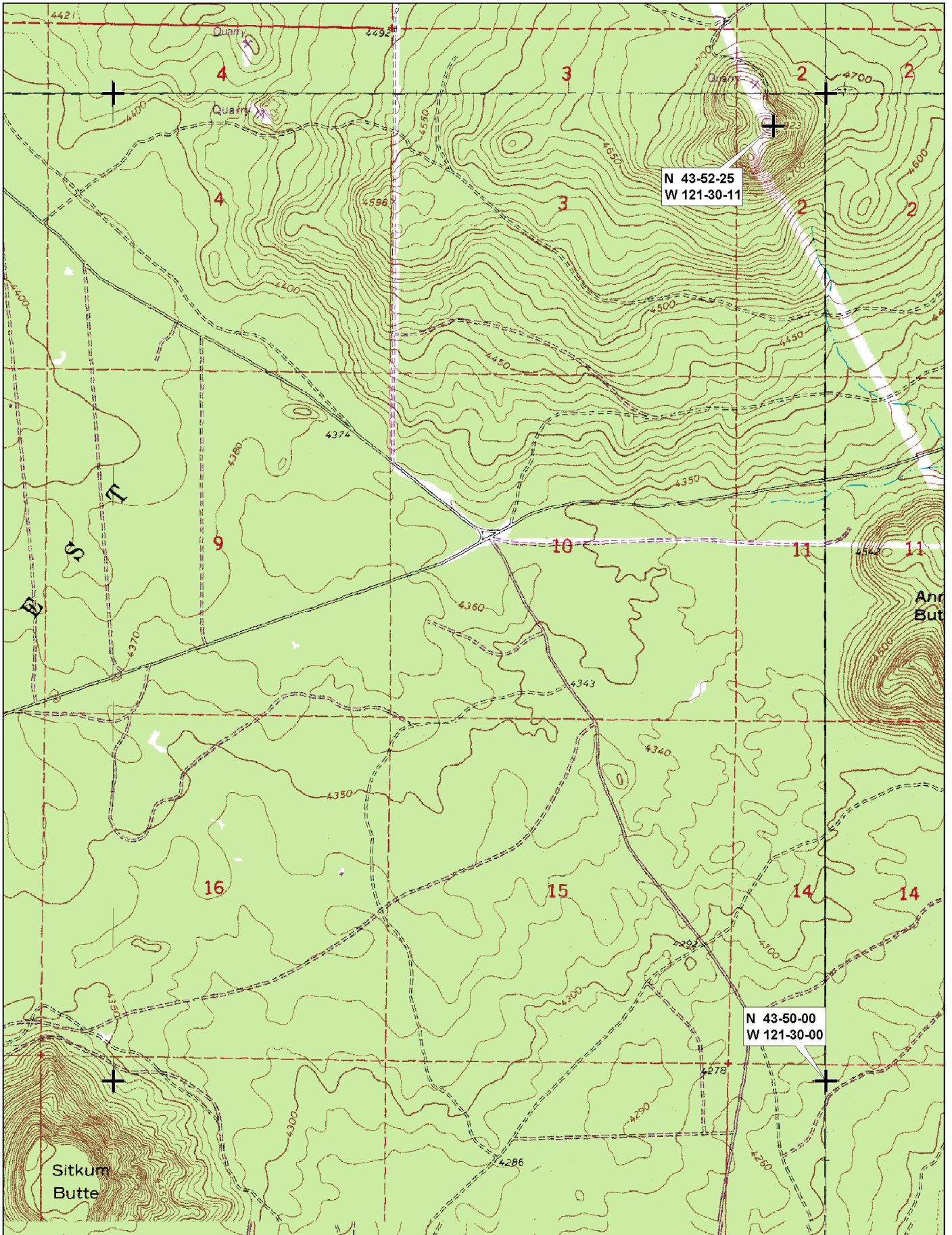
Pursuant to OET Bulletin No. 65, all station personnel and contractors are required to follow appropriate safety procedures before any work is commenced on the antenna tower, including reduction in power or discontinuance of operation before any maintenance work is undertaken. The site and tower will be posted with warning signs.

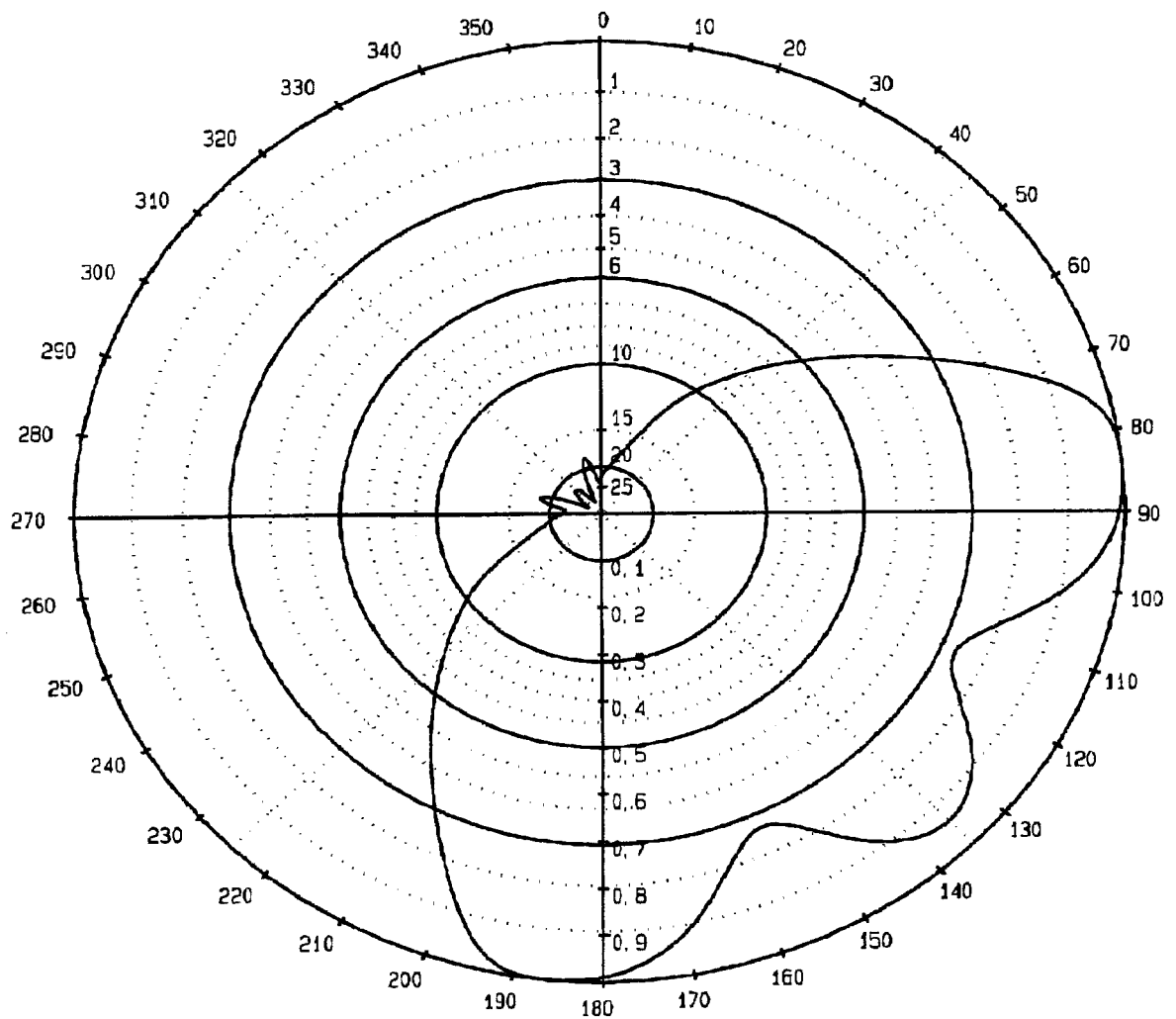
The permittee/licensee in coordination with other users of the site must reduce power or cease operation as necessary to protect persons having access to the site, tower or antenna from radiofrequency radiation in excess of FCC guidelines.

June 2, 2005

Erik C. Swanson







frequency in MHz 591.250
down-tilt in .0
max / mean in dB 4.43

Hatfield & Dawson

SCALA Medford Oregon	2 x 2 K723147 Panel Array	Typ Nr.
MB 23.5. 5 16:42	Ch: 32-34-38	Bl:

simulation with typical exactness of +/- 8% of max signal

Azimuth Radiation Pattern in % and dB at downtilt: .0

f = 591.250MHz

azimuth	%	dB	azimuth	%	dB
0	7.8	-22.2	180	99.0	-.1
5	9.3	-20.6	185	100.0	.0
10	10.6	-19.5	190	99.4	-.1
15	12.4	-18.1	195	94.8	-.5
20	15.5	-16.2	200	85.0	-1.4
25	19.6	-14.2	205	74.7	-2.5
30	25.9	-11.7	210	65.3	-3.7
35	31.6	-10.0	215	57.3	-4.8
40	37.0	-8.6	220	49.8	-6.1
45	43.2	-7.3	225	43.2	-7.3
50	49.8	-6.1	230	37.0	-8.6
55	57.2	-4.8	235	31.6	-10.0
60	65.4	-3.7	240	25.9	-11.7
65	74.7	-2.5	245	19.6	-14.2
70	84.9	-1.4	250	15.4	-16.2
75	94.7	-.5	255	12.5	-18.1
80	99.4	-.1	260	10.7	-19.4
85	100.0	.0	265	9.4	-20.6
90	99.0	-.1	270	7.8	-22.2
95	96.0	-.4	275	6.9	-23.2
100	90.8	-.8	280	8.9	-21.0
105	83.5	-1.6	285	12.0	-18.4
110	76.4	-2.3	290	10.3	-19.7
115	73.7	-2.6	295	4.7	-26.6
120	78.2	-2.1	300	3.1	-30.3
125	85.6	-1.3	305	4.5	-26.9
130	91.1	-.8	310	6.3	-23.9
135	93.3	-.6	315	7.0	-23.1
140	91.3	-.8	320	6.3	-23.9
145	85.6	-1.3	325	4.5	-26.9
150	78.0	-2.2	330	3.1	-30.3
155	73.7	-2.6	335	4.7	-26.6
160	76.5	-2.3	340	10.3	-19.7
165	83.4	-1.6	345	12.0	-18.4
170	90.8	-.8	350	8.9	-21.0
175	96.0	-.4	355	6.9	-23.2
180	99.0	-.1	360	7.8	-22.2

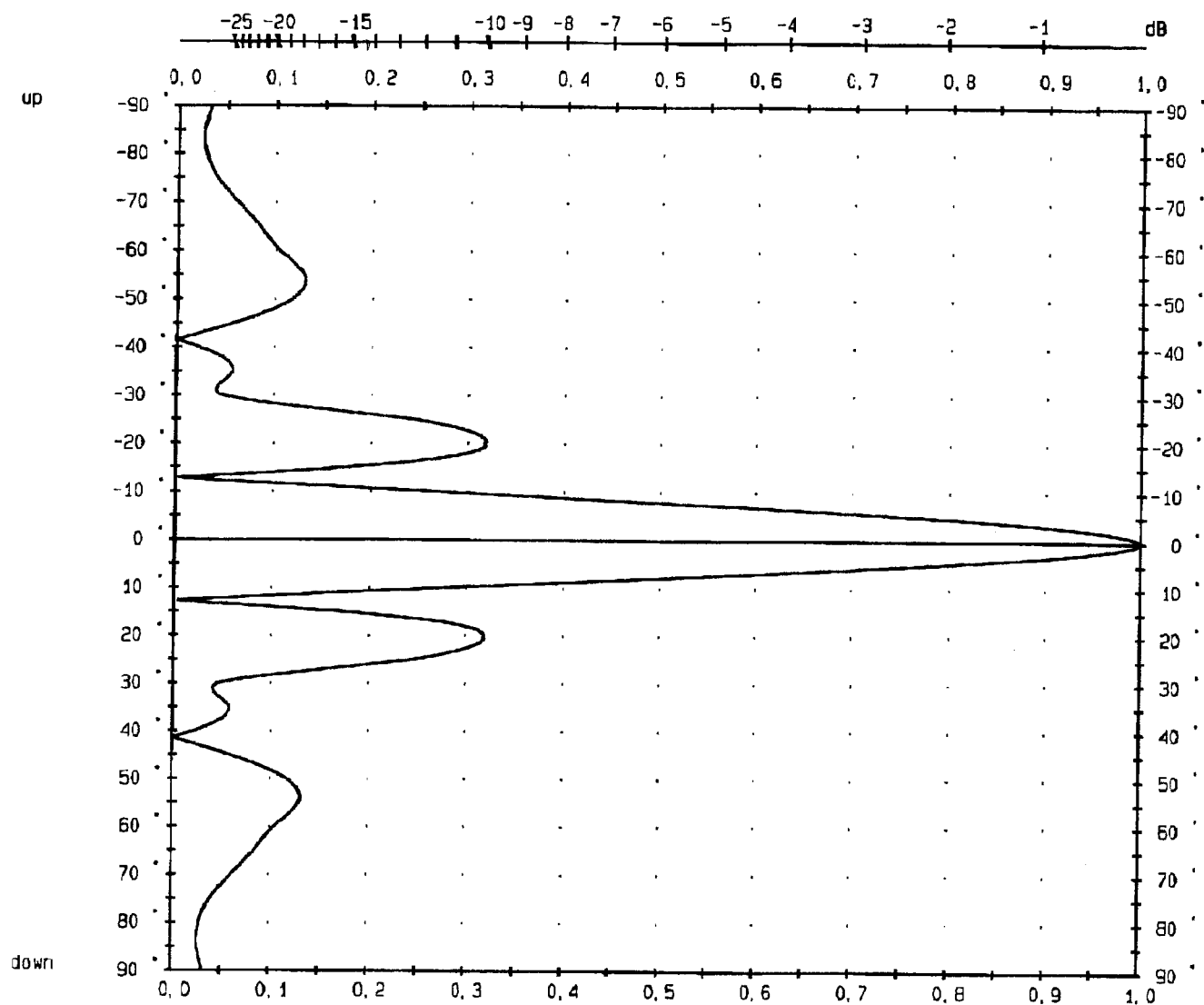
maximum fieldstrength was found at:

azimuth 84.

downtilt 0.

Hatfield & Dawson

S C A L A Medford Oregon	2 x 2 K723147 Panel Array	Typ Nr.
MB 23.5. 5 16: 42	Ch: 32-34-38 .	B1..



Hatfield & Dawson

SCALA Medford Oregon	2 x 2 K723147 Panel Array	Typ Nr.
MB 23.5.5 16:42	Ch: 32-34-38	B1..