

TECHNICAL EXHIBIT
APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT
FCC FILE NO. BPTTL-20010531ABO
CLASS A TV STATION KEXT-CA
FACILITY ID 70900
MODESTO, CALIFORNIA
CH 27 90 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application for modification of the construction permit (BPTTL-20010531ABO) for Class A TV station KEXT-CA at Modesto, California (Facility ID: 70900). The purpose of modification application is to change directional antenna system, increase the antenna radiation center height above mean sea level and increase the maximum effective radiated power (ERP) in any horizontal and vertical angle. No other changes are proposed, including no change in transmitter site, frequency offset, city of license or channel. The instant application is considered a "minor change" in facilities pursuant to Section 73.3572.

Current Authorization

Class A station KEXT-CA is currently authorized by outstanding construction permit, FCC File No. BPTTL-20010531ABO, to operate on channel 27 (548-554 MHz) with a "zero" carrier frequency offset using a Bogner B16UB "off-the-shelf" directional antenna (FCC antenna ID 18054) oriented at 80° true. The maximum ERP at horizontal and vertical angle is 90 kW. The antenna is authorized to be mounted at the 14 meter level on an existing 19 meter tower.

Proposed Operation

It is proposed to operate on KEXT-CA's current channel 27 utilizing a Bogner B24UB (24 bay, antenna ID 18081) directional antenna system oriented at 80° true and incorporating 1.7 degrees of electrical beam tilt. The maximum ERP towards the radio horizon will be 90 kW, and the maximum ERP at any horizontal or vertical angle will be 150 kW. In addition, as a result of the change in the antenna system, the

overall height of the existing tower will increase from 19 meters above ground level to 25 meters above ground level and the antenna radiation center height above mean sea level will increase from 831 meters to 835 meters.

Response to Paragraph 4 - Antenna Structure Registration

It is proposed to increase the overall height of the existing tower from 19 meters to 25 meters above ground level. The FCC's TOWAIR program indicates that proposed structure does not require registration.

Response to Paragraph 11 - TV Broadcast Analog Protection

A study has been conducted using the provisions of Section 74.705 which indicates that the proposed KEXT-CA operation will not create prohibited interference to other existing, authorized or proposed NTSC full-power stations with the exceptions of the following:

KTSF, Ch. 26, San Francisco, CA (License, BLCT-2507)
KREN-TV, Ch. 27, Reno, NV (License, BLCT-19861016KF)
KREN-TV, Ch. 27, Reno, NV (CP, BPCT-19960122KE)

However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.705(e)], it is believed that KEXT-CA's proposed operation complies with the FCC's interference criteria towards KTSF and KREN-TV. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid. The results of the OET Bulletin No. 69 are tabulated on Figure 1 and, as indicated, the proposal complies with the FCC's 0.5% interference threshold towards KTSF and KREN-TV.¹ It is noted that interference masking was considered towards those stations which interference was calculated to occur.

¹ The 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 2 km was employed. An Sun 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.

Response to Paragraph 11 - DTV Station and DTV Table of Allotments Protection

Calculations based on OET Bulletin No. 69 indicate that the proposed KEXT-CA operation on channel 27 complies with the FCC's 0.5% interference threshold criteria to all allotted, proposed or actual DTV operating facilities on channels 26, 27 and 28. Figure 2 provides the output of study based on OET-69 Bulletin which demonstrates that the proposed KEXT-CA operation complies with the FCC's DTV interference criteria.

Response to Paragraph 11 - LPTV, TV Translator, Class A TV and Digital Class A Protection

A study has been conducted which indicates that the KEXT-CA proposal will not create prohibited interference to other existing, authorized or proposed LPTV, TV Translator, Class A and Digital Class A stations with the exceptions of the following:

K27DV, Ch. 27, Crowley Lake, CA (License, BLTTL-19940429JZ)
K27GZ, Ch. 27, Mariposa, CA (License, BLTT-20020221AAJ)

However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.707(e)] it is believed that KEXT-CA's proposed operation complies with the FCC's interference criteria towards these stations. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid. The results of the OET Bulletin No. 69 study are tabulated on Figure 3 and, as indicated, the proposal complies with the FCC's 0.5% interference threshold. It is noted that interference masking was considered towards those stations which interference was calculated to occur.

Response to Paragraph 11 - Land Mobile Station Protection

The proposed KEXT-CA operation complies with the FCC's interference requirements to all pertinent land mobile radio service (LMRS) stations.

Response to Paragraph 12 - Environmental Protection Act

The proposed KEXT-CA LPTV facilities were evaluated in terms of potential radiofrequency radiation exposure at ground level in accordance with OST Bulletin No. 65, "Evaluating Compliance With FCC-Specified Guidelines for Human Exposure to Radiofrequency Radiation." The calculated power density at the base of the tower was calculated using the appropriate equation on Page 13 of the Bulletin.

Using a greater than expected vertical relative field value of 0.15 towards the tower base (see vertical plane relative field pattern attached as Figure 4), a maximum visual effective radiated power of 150 kilowatts and 10 percent aural power, the calculated power density at 2 meters above ground level at the base of the tower is 0.2202 milliwatt per square centimeter (mW/cm^2), or 60 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ($0.37 \text{ mW}/\text{cm}^2$ for TV channel 27) and 12 percent of the Commission's recommended limit applicable to controlled exposure areas ($1.84 \text{ mW}/\text{cm}^2$ for TV channel 27). Therefore, it is believed that the proposal will comply with the RF emission rules. If necessary, measurements will be made to substantiate compliance with the 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 effect in the event that workers or other authorized personnel enter the restricted area or climb the tower 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.

In addition, it appears that the existing tower is otherwise excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

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October 28, 2002

OET-69 NTSC INTERFERENCE CAUSED STUDY

CELL SIZE : 2.00
Using offset in determining thresholds
Per 6th Report & Order and FCC OET-69 Bulletin

KREN-2 39-18-47 119-52-59 27(+) 1820.000 kw 2973 m DA 50.0 % 63.0 dBu
RENO NV 20515 387 FCC NTSC BL: 438322 FCC IX POP%: 4.7
LIC BLCT19861016KF

0.66	0.80	0.89	0.96	1.00	0.97	0.91	0.81	0.70	0.60	0.53	0.50
0.52	0.59	0.69	0.81	0.91	0.98	1.00	0.98	0.90	0.81	0.68	0.52
0.34	0.18	0.19	0.31	0.42	0.45	0.42	0.31	0.19	0.19	0.34	0.51

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	29598.69	432975
not affected by terrain losses	18690.51	380861

KEXTP1 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0
MODESTO CA

PROPOSED OPERATION

1.00	0.98	0.95	0.96	0.98	0.97	0.88	0.73	0.52	0.33	0.24	0.24
0.22	0.22	0.20	0.22	0.23	0.25	0.25	0.25	0.23	0.22	0.20	0.22
0.22	0.24	0.24	0.33	0.52	0.73	0.88	0.97	0.98	0.96	0.95	0.98

(45.0 1.00)(315.0 1.00)

Ref Az: 80.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 28.00

	Area	Pop
Interference	84.59	0(0.02%)

KREN-T 39-18-47 119-52-59 27(+) 2630.000 kw 2973 m DA 50.0 % 63.0 dBu
RENO NV 20515 387 FCC NTSC BL: 438322 FCC IX POP%: 4.7
CP BPCT19960122KE

0.68	0.80	0.90	0.98	1.00	0.97	0.89	0.80	0.69	0.58	0.51	0.49
0.51	0.58	0.69	0.80	0.89	0.97	1.00	0.98	0.90	0.80	0.68	0.53
0.34	0.20	0.19	0.29	0.42	0.47	0.42	0.29	0.19	0.20	0.34	0.53

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	32200.31	438895
not affected by terrain losses	20406.15	385604

KEXTP1 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0
MODESTO CA

PROPOSED OPERATION

1.00	0.98	0.95	0.96	0.98	0.97	0.88	0.73	0.52	0.33	0.24	0.24
0.22	0.22	0.20	0.22	0.23	0.25	0.25	0.25	0.23	0.22	0.20	0.22
0.22	0.24	0.24	0.33	0.52	0.73	0.88	0.97	0.98	0.96	0.95	0.98

(45.0 1.00)(315.0 1.00)

Ref Az: 80.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 28.00

	Area	Pop
Interference	68.48	84(0.02%)

KTSF 37-41-12 122-26-03 26(-) 2510.000 kw 460 m DA 50.0 % 62.9 dBu
 SAN FRANCISCO CA 14492 4950 FCC NTSC BL: 5773035 FCC IX POP%: 1.0
 LIC BLCT2507

0.85	0.88	0.91	0.95	0.97	0.98	0.99	1.00	0.99	0.98	0.96	0.93
0.91	0.88	0.83	0.78	0.71	0.63	0.52	0.40	0.32	0.30	0.35	0.40
0.44	0.44	0.40	0.34	0.29	0.30	0.38	0.50	0.62	0.70	0.77	0.82

(65.0 1.00)(205.0 0.29)(285.0 0.28)

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	20607.24	5768441
not affected by terrain losses	15147.07	5056643

KEXTPl 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0
 MODESTO CA

PROPOSED OPERATION

1.00	0.98	0.95	0.96	0.98	0.97	0.88	0.73	0.52	0.33	0.24	0.24
0.22	0.22	0.20	0.22	0.23	0.25	0.25	0.25	0.23	0.22	0.20	0.22
0.22	0.24	0.24	0.33	0.52	0.73	0.88	0.97	0.98	0.96	0.95	0.98

(45.0 1.00)(315.0 1.00)

Ref Az: 80.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -13.00

	Area	Pop
Interference	0	0

Summary of Calculations

Facility	Channel	Type	Baseline	Permissible	IX	%Base
KREN-2, RENO, NV	27	TV	438322	0.5	84	0.02*
KREN-T, RENO, NV	27	TV	438322	0.5	84	0.02*
KTSF, SAN FRANCISCO, CA	26	TV	5773035	0.5	0	0.00

*Includes interference masked by other pertinent stations.

OET-69 DTV INTERFERENCE CAUSED STUDY

CELL SIZE : 2.00
Using offset in determining thresholds
Per 6th Report & Order and FCC OET-69 Bulletin

KTSF2 37-41-15 122-26-01 27(N) 220.000 kw 441.4 m DA 90.0 % 40.0 dBu
SAN FRANCISCO CA 15665 5173 DTVSERVICE: 5193837 NTSCSERVICE: 4950000
CP BXP CDT20020415AAQ
1.00 0.97 0.93 0.87 0.81 0.76 0.74 0.74 0.78 0.83 0.89 0.95
0.99 1.00 0.98 0.92 0.83 0.71 0.58 0.42 0.28 0.19 0.17 0.20
0.22 0.21 0.18 0.17 0.22 0.33 0.48 0.63 0.76 0.87 0.95 0.92
(356.0 1.00)(357.0 1.00)

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	23632.33	6085029
not affected by terrain losses	19285.14	5527547

KEXTP2 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0
MODESTO CA
PROPOSED OPERATION
1.00 0.98 0.95 0.96 0.98 0.97 0.88 0.73 0.52 0.33 0.24 0.24
0.22 0.22 0.20 0.22 0.23 0.25 0.25 0.25 0.23 0.22 0.20 0.22
0.22 0.24 0.24 0.33 0.52 0.73 0.88 0.97 0.98 0.96 0.95 0.98
(45.0 1.00)(315.0 1.00)

Ref Az: 80.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	88.39	1066(0.02%)

KTSF 37-41-12 122-26-03 27(N) 500.000 kw 460.1 m DA 90.0 % 40.0 dBu
SAN FRANCISCO CA 15665 5173 DTVSERVICE: 5193837 NTSCSERVICE: 4950000
CP MOD BMP CDT20000428AAT
0.69 0.67 0.63 0.59 0.57 0.57 0.59 0.62 0.69 0.76 0.85 0.93
0.99 1.00 0.96 0.87 0.75 0.61 0.48 0.38 0.32 0.31 0.32 0.35
0.37 0.38 0.36 0.33 0.32 0.33 0.37 0.44 0.53 0.61 0.67 0.69

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	27275.74	6148489
not affected by terrain losses	22212.03	5581659

KEXTP2 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0
MODESTO CA
PROPOSED OPERATION
1.00 0.98 0.95 0.96 0.98 0.97 0.88 0.73 0.52 0.33 0.24 0.24
0.22 0.22 0.20 0.22 0.23 0.25 0.25 0.25 0.23 0.22 0.20 0.22
0.22 0.24 0.24 0.33 0.52 0.73 0.88 0.97 0.98 0.96 0.95 0.98

(45.0 1.00)(315.0 1.00)
Ref Az: 80.0
Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	221.04	14848(0.29%)

DKTSF 37-41-12 122-26-03 27(0) 95.200 kw 460 m DA 90.0 % 40.0 dBu
SAN FRANCISCO CA 15665 5173 DTVSERVICE: 5193837 NTSCSERVICE: 4950000
DTVALT DTV ALLOTMENT
0.77 0.81 0.86 0.92 0.95 0.97 0.99 1.00 0.99 0.98 0.95 0.90
0.88 0.83 0.76 0.68 0.59 0.49 0.36 0.27 0.21 0.19 0.24 0.28
0.32 0.32 0.28 0.23 0.19 0.20 0.27 0.38 0.51 0.60 0.68 0.73

Ref Az: 0.0
Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	20639.38	5773411
not affected by terrain losses	16328.29	5316706

KEXTP2 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0
MODESTO CA
PROPOSED OPERATION
1.00 0.98 0.95 0.96 0.98 0.97 0.88 0.73 0.52 0.33 0.24 0.24
0.22 0.22 0.20 0.22 0.23 0.25 0.25 0.25 0.23 0.22 0.20 0.22
0.22 0.24 0.24 0.33 0.52 0.73 0.88 0.97 0.98 0.96 0.95 0.98

(45.0 1.00)(315.0 1.00)
Ref Az: 80.0
Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	60.27	511(0.01%)

DKEYTT 34-31-32 119-57-28 27(0) 698.800 kw 1265 m DA 90.0 % 40.0 dBu
SANTA BARBARA CA 42096 1166 DTVSERVICE: 1166000 NTSCSERVICE: 1276000
DTVALT DTV ALLOTMENT
0.94 0.95 0.95 0.96 0.97 0.98 1.00 1.00 1.00 1.00 1.00 0.99
0.95 0.89 0.85 0.83 0.82 0.81 0.80 0.80 0.81 0.81 0.82 0.86
0.94 0.99 1.00 0.98 1.00 1.00 0.99 0.94 0.92 0.92 0.93 0.94
(94.0 1.00)(95.0 1.00)(96.0 1.00)(97.0 1.00)(98.0 1.00)

Ref Az: 0.0
Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	54804.57	1681983
not affected by terrain losses	42722.15	1185350

KEXTP2 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0
MODESTO CA
PROPOSED OPERATION
1.00 0.98 0.95 0.96 0.98 0.97 0.88 0.73 0.52 0.33 0.24 0.24
0.22 0.22 0.20 0.22 0.23 0.25 0.25 0.25 0.23 0.22 0.20 0.22
0.22 0.24 0.24 0.33 0.52 0.73 0.88 0.97 0.98 0.96 0.95 0.98

(45.0 1.00)(315.0 1.00)
Ref Az: 80.0
Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	28.24	0

KEYT-T 34-31-32 119-57-28 27(N) 1000.000 kw 1252 m DA 90.0 % 40.0 dBu
SANTA BARBARA CA 42096 1166 DTVSERVICE: 1166000 NTSCSERVICE: 1276000
CP MOD BMPCDT20010126ABE

0.61	0.57	0.59	0.57	0.60	0.67	0.76	0.88	0.96	1.00	0.98	0.92
0.84	0.73	0.59	0.44	0.31	0.25	0.28	0.36	0.40	0.37	0.30	0.25
0.30	0.43	0.58	0.73	0.84	0.92	0.98	1.00	0.97	0.89	0.77	0.67

Ref Az: 0.0
Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	49716.47	1634516
not affected by terrain losses	38315.39	1198826

KEXTP2 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0
MODESTO CA

Proposed Operation

1.00	0.98	0.95	0.96	0.98	0.97	0.88	0.73	0.52	0.33	0.24	0.24
0.22	0.22	0.20	0.22	0.23	0.25	0.25	0.25	0.23	0.22	0.20	0.22
0.22	0.24	0.24	0.33	0.52	0.73	0.88	0.97	0.98	0.96	0.95	0.98

(45.0 1.00)(315.0 1.00)

Ref Az: 80.0
Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	28.22	0

Summary of Calculations

Facility	Channel	Type	Baseline	Permissible	IX	%Base
KTSF2, SAN FRANCISCO, C 27		DTV	5193837	0.5	1066	0.02*
KTSF, SAN FRANCISCO, CA 27		DTV	5193837	0.5	14848	0.29*
DKTSF, SAN FRANCISCO, C 27		DTV	5193837	0.5	511	0.01*
DKEYTT, SANTA BARBARA, 27		DTV	1276000	0.5	0	0.00
KEYT-T, SANTA BARBARA, 27		DTV	1276000	0.5	0	0.00

*Includes interference masked by other pertinent stations.

OET-69 LPTV/CLASS A INTERFERENCE CAUSED STUDY

CELL SIZE : 2.00
Using offset in determining thresholds
Per 6th Report & Order and FCC OET-69 Bulletin

K27DV 37-42-45 118-39-27 27(Z) 0.136 kw 2745 m 50.0 % 74.0 dBu

CROWLEY LAKE-LONG VACA

LIC BLTTL19940429JZ

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	277.3617	0
not affected by terrain losses	273.3420	0

KEKTP3 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0

MODESTO CA

PROPOSED OPERATION

1.00	0.98	0.95	0.96	0.98	0.97	0.88	0.73	0.52	0.33	0.24	0.24
0.22	0.22	0.20	0.22	0.23	0.25	0.25	0.25	0.23	0.22	0.20	0.22
0.22	0.24	0.24	0.33	0.52	0.73	0.88	0.97	0.98	0.96	0.95	0.98

(45.0 1.00)(315.0 1.00)

Ref Az: 80.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

	Area	Pop
Interference	0	0

K27GZ 37-31-59 120-01-33 27(+) 0.250 kw 1310 m DA 50.0 % 74.0 dBu

MARIPOSA CA

LIC BLTT20020221AAJ

1.00	1.00	1.00	1.00	1.00	0.99	0.95	0.89	0.81	0.73	0.61	0.53
0.43	0.29	0.15	0.07	0.09	0.14	0.15	0.14	0.09	0.07	0.15	0.29
0.43	0.53	0.62	0.73	0.81	0.89	0.95	0.99	1.00	1.00	1.00	1.00

Ref Az: 270.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	338.4644	1525
not affected by terrain losses	334.4351	1525

KEKTP3 37-28-48 121-21-02 27(Z) 90.000 kw 835 m DA 10.0 % 74.0

MODESTO CA

PROPOSED OPERATION

1.00	0.98	0.95	0.96	0.98	0.97	0.88	0.73	0.52	0.33	0.24	0.24
0.22	0.22	0.20	0.22	0.23	0.25	0.25	0.25	0.23	0.22	0.20	0.22
0.22	0.24	0.24	0.33	0.52	0.73	0.88	0.97	0.98	0.96	0.95	0.98

(45.0 1.00)(315.0 1.00)

Ref Az: 80.0

Using DEFAULT vertical antenna pattern

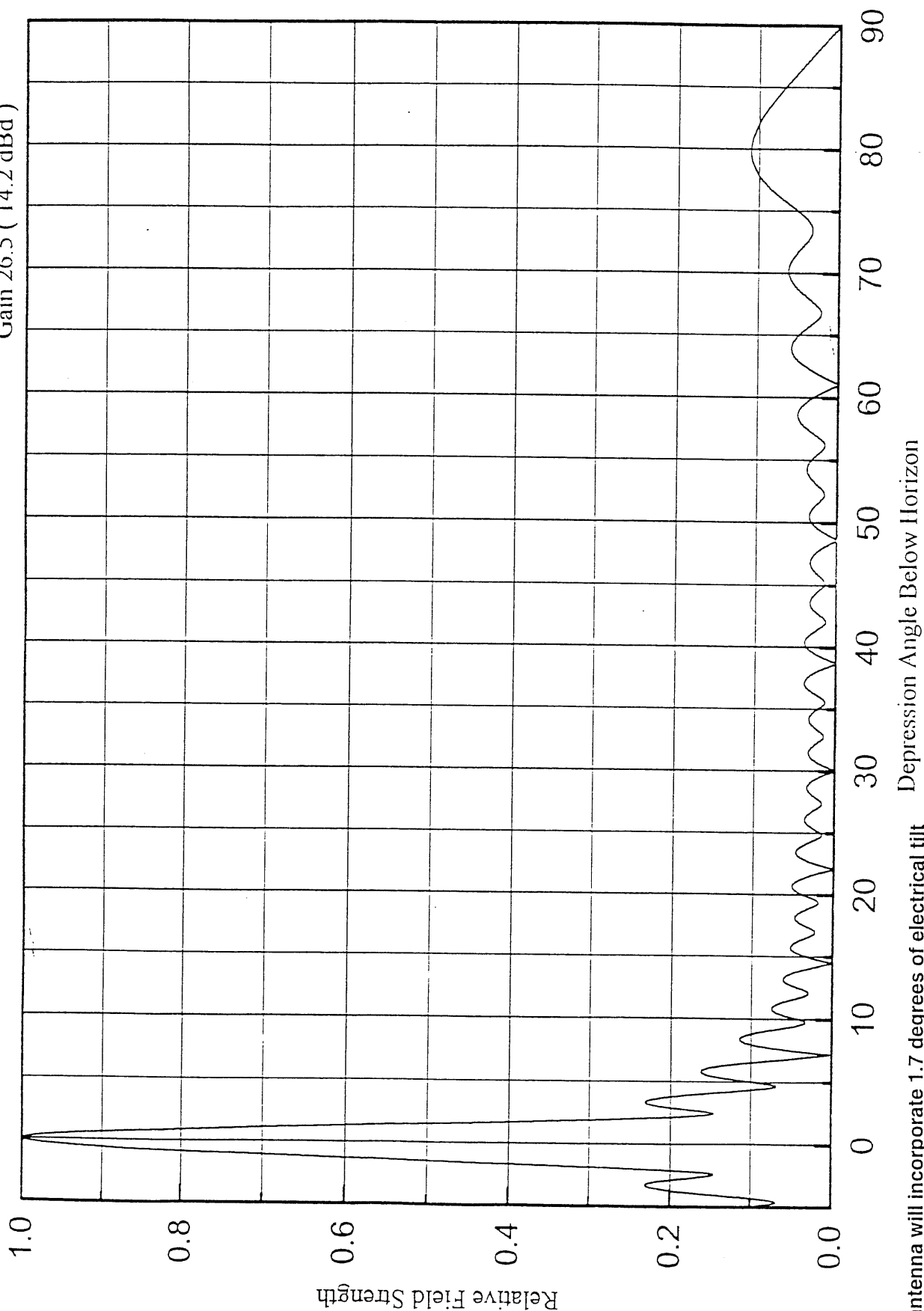
D/U Baseline: 28.00

	Area	Pop
Interference	84.62	0

Summary of Calculations

Facility	Channel	Type	Baseline	Permissible	IX	%Base
K27DV, CROWLEY LAKE-LON	27	TV	0	0.5	0	0.00
K27GZ, MARIPOSA, CA	27	TV	1525	0.5	0	0.00*

*Includes interference masked by other pertinent stations.



**The antenna will incorporate 1.7 degrees of electrical tilt