

TECHNICAL EXHIBIT
APPLICATION FOR
MODIFICATION OF CONSTRUCTION PERMIT
(FCC FILE NO. BPTTL-20000427AAO)
LOW POWER TV STATION KQJA-LP
FACILITY ID 23272
FRESNO, CALIFORNIA
CH 41 150 KW (MAX-DA)

Technical Narrative

The technical exhibit of which this narrative is part was prepared in support of an application to modify the construction permit of Low Power TV station KQJA-LP at Fresno, California (Facility ID: 23272; File No. BPTTL-20000427AAO). Specifically, this modification application proposes to change transmitter site, increase the antenna radiation center height above mean sea level (RCMSL) from 1035 meters to 1412 meters, increase the effective radiated power (ERP) from 100 kW to 150 kW and change the directional antenna system. No other changes are proposed, including no change in channel (41), frequency offset designation (-), or community of license (Fresno). Furthermore, the proposed 74 dBu contour will encompass a portion of the authorized 74 dBu contour and, therefore, this application is considered a "minor change" in facilities pursuant to Section 73.3572.

The proposal would not be subject to environmental processing in accordance with Section 1.1306. It is proposed to side-mount the directional antenna on a 49 meter supporting structure. The structure does not require FAA notification or tower registration. It is believed that the instant application conforms with all other applicable rules and regulations of the Federal Communications Commission.

Minor Change Application

Figure 1 depicts the authorized and herein proposed 74 dBu contours for KQJA-LP. As indicated, the proposed 74 dBu contour encompasses a portion of the authorized 74 dBu contour. Therefore, the proposed modification is considered a "minor" change in facilities pursuant to Section 73.3572.

Response to Paragraph 13(a) - TV Broadcast Analog Protection

A study has been conducted using the provisions of Section 74.705 which indicates that the KQJA-LP proposal will not create prohibited interference to other existing, authorized or proposed NTSC full-power stations with the exception of the licensed operation of KMPH on channel 26 at Fresno, CA (BLCT-19941227KG). This is a -15 channel UHF picture image taboo. Therefore, waiver of Section 74.705 is requested with respect to KMPH. Justification for the waiver request is provided below.

Based on consideration of terrain shielding and the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.705(e)], it is believed that KQJA-LP's operation complies with the FCC's interference criteria. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid.¹ The interference calculations are tabulated on Figure 2 and, as indicated, the proposed KQJA-LP operation complies with the FCC's 0.5% "rounding allowance" for such calculations (see paragraph 78 of MM Docket No. 00-10).

Response to Paragraph 13(b) - DTV Station Protection

Calculations based on OET Bulletin No. 69 indicate that the proposed KQJA-LP operation on channel 41 complies with the FCC's 0.5% "rounding allowance" criteria to all allotted, proposed or actual DTV operating facilities on channels 40, 41 and 42. Figure 2 provides the output of study based on OET-69 Bulletin.

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 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.

Response to Paragraph 13(c) - LPTV/TV Translator Protection

A study has been conducted using the provisions of Section 74.707 which indicates that the KQJA-LP proposal will not create prohibited interference to other existing, authorized or proposed LPTV stations with the exception of LPTV station K41AC on channel 41 at Bear Valley Springs, CA (BLTT-19800721II). However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.707(e)], it is believed that KQJA-LP's operation complies with the FCC's interference criteria towards K41AC. 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 re tabulated on Figure 2 and, as indicated, the proposed KQJA-LP operation complies with the FCC's 0.5% "rounding allowance" for such calculations.

Environmental Considerations

The proposed KQJA-LP television 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. As shown on Figure 3, the vertical plane field values at depression angles toward the tower base (-60° to -90° elevation) are less than 0.15. Therefore, using a greater than expected vertical relative field value of 0.15, 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 0.0026 milliwatt per square centimeter (mW/cm^2), or 7.9 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ($0.42 \text{ mW}/\text{cm}^2$ for TV channel 41) and 1.6 of the Commission's recommended limit applicable to controlled exposure areas ($2.12 \text{ mW}/\text{cm}^2$ for TV channel 41). Therefore, it is believed that the proposal will comply with the new RF emission rules. If

necessary, measurements will be made to substantiate compliance.

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.

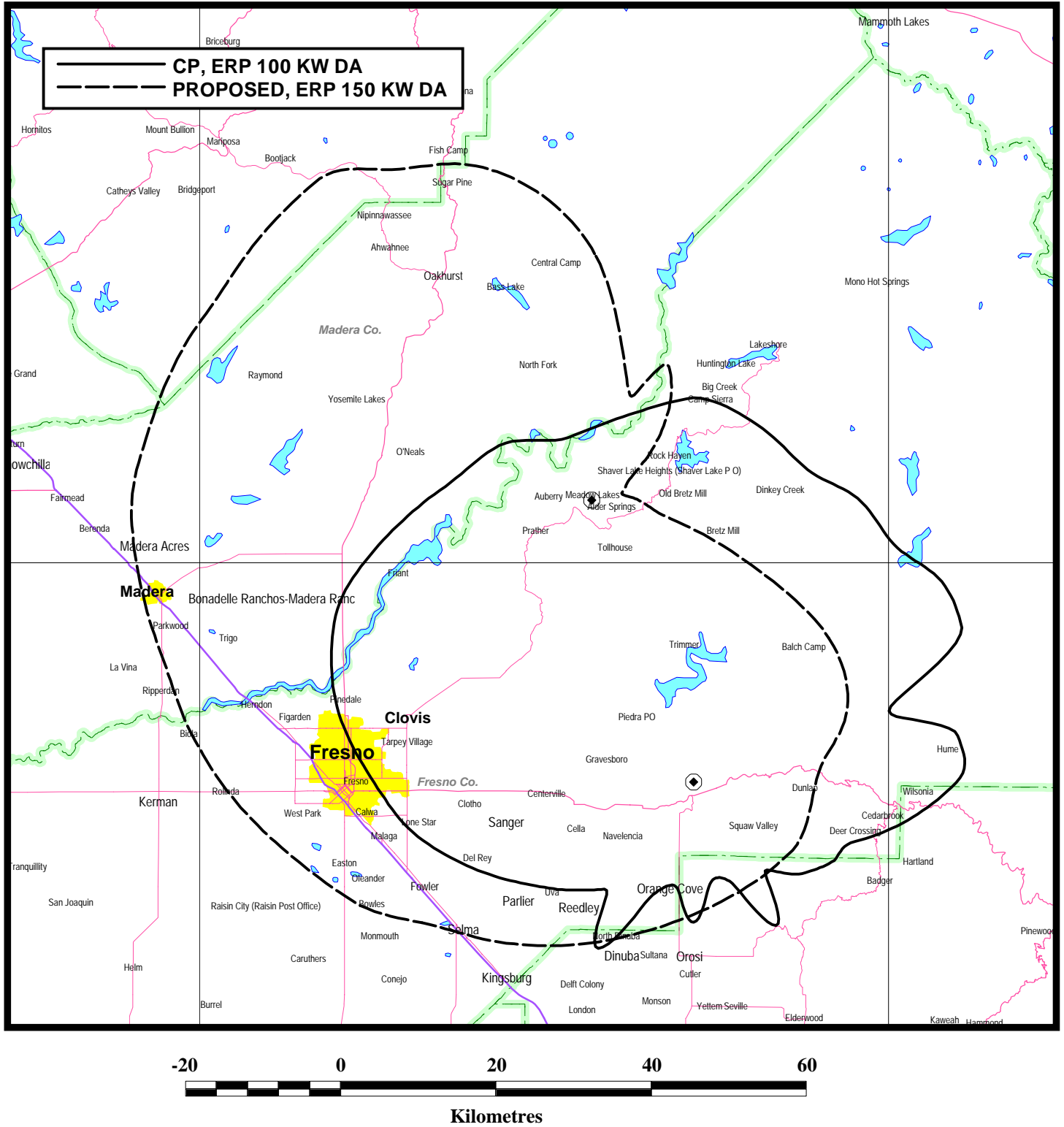
In addition, it appears that the tower is otherwise excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

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January 2, 2002

FIGURE 1



**PREDICTED 74 DBU CONTOURS
LPTV STATION KQJA-LP
FRESNO, CA
CH 41 150 KW (MAX-DA)**

OET-69 INTERFERENCE CAUSED

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

KMPH 36-40-02 118-52-42 26(+) 3240.000 kw 2549 m DA 50.0 % 62.9 dBu
FRESNO CA
LIC BLCT19941227KG
0.97 0.87 0.76 0.75 0.68 0.47 0.25 0.22 0.15 0.09 0.15 0.20
0.25 0.50 0.71 0.75 0.78 0.88 0.97 0.92 0.74 0.82 0.98 0.91
0.68 0.73 0.92 1.00 0.91 0.72 0.71 0.92 0.99 0.78 0.75 0.93
Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	33381.23	1173688
not affected by terrain losses	27710.14	1151887

KQJA-P 37-04-22 119-25-51 41(-) 150.000 kw 1412 m DA 10.0 % 74.2
FRESNO CA
1.00 1.00 1.00 1.00 1.00 0.99 0.95 0.89 0.81 0.73 0.62 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: 230.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -9.00

	Area	Pop
Interference	169.41	2011(0.2)

DKVPT 36-44-45 119-16-52 40(0) 87.000 kw 1083 m DA 90.0 % 41.2 dBu
FRESNO CA 22864 1125 DTVSERVICE: 1125000 NTSCSERVICE: 1117000
DTVALT DTV ALLOTMENT
0.23 0.19 0.24 0.27 0.29 0.29 0.26 0.22 0.18 0.19 0.26 0.37
0.48 0.57 0.66 0.73 0.78 0.83 0.87 0.91 0.95 0.97 0.99 1.00
0.98 0.96 0.93 0.92 0.86 0.81 0.75 0.68 0.60 0.50 0.40 0.29
Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	26263.44	1137464
not affected by terrain losses	23202.53	1121464

KQJA-P 37-04-22 119-25-51 41(-) 150.000 kw 1412 m DA 10.0 % 74.2
FRESNO CA
1.00 1.00 1.00 1.00 1.00 0.99 0.95 0.89 0.81 0.73 0.62 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: 230.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00

	Area	Pop
Interference	28.19	527(0.0 FCC - 0.0)

KVPT 36-44-45 119-16-51 40(N) 250.000 kw 1102 m DA 90.0 % 41.2 dBu
FRESNO CA 22864 1125 DTVSERVICE: 1125000 NTSCSERVICE: 1117000
CP BPEDT20000425AAG

0.37	0.32	0.34	0.40	0.46	0.47	0.46	0.40	0.34	0.32	0.37	0.47
0.59	0.70	0.78	0.84	0.88	0.91	0.93	0.95	0.97	0.99	1.00	1.00
1.00	0.99	0.97	0.95	0.93	0.91	0.88	0.84	0.78	0.70	0.59	0.47

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	34281.13	1204726
not affected by terrain losses	29996.99	1184412

KQJA-P 37-04-22 119-25-51 41(-) 150.000 kw 1412 m DA 10.0 % 74.2
FRESNO CA

1.00	1.00	1.00	1.00	1.00	0.99	0.95	0.89	0.81	0.73	0.62	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: 230.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00

	Area	Pop
Interference	32.21	444(0.0 FCC - 0.0)

DKLXVT 37-06-41 121-50-30 41(0) 79.200 kw 1200 m DA 90.0 % 41.2 dBu
SAN JOSE CA 16801 4486 DTVSERVICE: 4486000 NTSCSERVICE: 4358000
DTVALT DTV ALLOTMENT

1.00	0.93	0.76	0.54	0.36	0.22	0.17	0.13	0.11	0.14	0.23	0.33
0.43	0.47	0.48	0.47	0.47	0.49	0.50	0.47	0.36	0.21	0.12	0.17
0.24	0.23	0.15	0.14	0.25	0.37	0.47	0.55	0.63	0.72	0.86	0.97

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	23761.00	5260824
not affected by terrain losses	16956.15	4557864

KQJA-P 37-04-22 119-25-51 41(-) 150.000 kw 1412 m DA 10.0 % 74.2
FRESNO CA

1.00	1.00	1.00	1.00	1.00	0.99	0.95	0.89	0.81	0.73	0.62	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: 230.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	79.96	2553(0.0 FCC - 0.1)

KKPX 37-41-15 122-26-01 41(N) 1000.000 kw 461.8 m DA 90.0 % 41.2 dBu
SAN JOSE CA 16801 4486 DTVSERVICE: 4486000 NTSCSERVICE: 4358000
CP BPCDT19991101AEV

0.99	0.96	0.94	0.92	0.90	0.90	0.90	0.90	0.90	0.92	0.94	0.96
0.99	1.00	0.99	0.94	0.85	0.73	0.59	0.44	0.30	0.22	0.21	0.23
0.25	0.23	0.21	0.22	0.30	0.44	0.59	0.73	0.85	0.94	0.99	1.00

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	31204.90	6583057
not affected by terrain losses	25391.40	5761223

KQJA-P 37-04-22 119-25-51 41(-) 150.000 kw 1412 m DA 10.0 % 74.2
FRESNO CA

1.00	1.00	1.00	1.00	1.00	0.99	0.95	0.89	0.81	0.73	0.62	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: 230.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	409.80	21431(0.37 FCC - 0.48)

K41AC 35-09-09 118-34-50 41(N) 0.273 kw 1780 m 50.0 % 74.2 dBu
BEAR VALLEY SPRINGS CA
LIC BLTT19800721II

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	456.1593	16916
not affected by terrain losses	452.1579	16916

KQJA-P 37-04-22 119-25-51 41(-) 150.000 kw 1412 m DA 10.0 % 74.2
FRESNO CA

1.00	1.00	1.00	1.00	1.00	0.99	0.95	0.89	0.81	0.73	0.62	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: 230.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

	Area	Pop
Interference	8.00	0(0.0)

DKLCS 34-13-26 118-03-45 41(0) 58.200 kw 1774 m DA 90.0 % 41.2 dBu
LOS ANGELES CA 21457 12504 DTVSERVICE:12504000 NTSCSERVICE:12096000
DTVALT DTV ALLOTMENT

0.23	0.24	0.21	0.18	0.16	0.18	0.24	0.32	0.43	0.54	0.68	0.80
0.89	0.97	0.99	1.00	1.00	0.99	0.99	0.99	0.99	0.98	0.97	0.98
0.95	0.90	0.84	0.75	0.64	0.53	0.43	0.32	0.22	0.19	0.18	0.21

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

Area Pop
within Noise Limited Contour 28580.40 13608476
not affected by terrain losses 21887.19 12566085

KQJA-P 37-04-22 119-25-51 41(-) 150.000 kw 1412 m DA 10.0 % 74.2
FRESNO CA
1.00 1.00 1.00 1.00 1.00 0.99 0.95 0.89 0.81 0.73 0.62 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: 230.0
Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

Interference Area Pop
0 0

KLCS 34-13-26 118-03-45 41(N) 162.000 kw 1773.9 m DA 90.0 % 41.2 dBu
LOS ANGELES CA 21457 12504 DTVSERVICE:12504000 NTSCSERVICE:12096000
CP BPEDT19991221AAV
0.43 0.43 0.50 0.64 0.79 0.88 0.92 0.95 0.98 1.00 0.98 0.92
0.82 0.72 0.63 0.59 0.56 0.52 0.46 0.40 0.36 0.36 0.37 0.39
0.40 0.41 0.42 0.43 0.45 0.47 0.47 0.43 0.37 0.35 0.39 0.43
Ref Az: 0.0
Using DEFAULT vertical antenna pattern

Area Pop
within Noise Limited Contour 32121.23 13886693
not affected by terrain losses 22500.47 12649029

KQJA-P 37-04-22 119-25-51 41(-) 150.000 kw 1412 m DA 10.0 % 74.2
FRESNO CA
1.00 1.00 1.00 1.00 1.00 0.99 0.95 0.89 0.81 0.73 0.62 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: 230.0
Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

Interference Area Pop
0 0

Summary of Calculations

Facility	Channel	Type	Baseline	Permissible	IX	%Base
KMPH, FRESNO, CA	26	TV	1173688	0.5	2011	0.17
DKVPT, FRESNO, CA	40	DTV	1125000	0.5	527	0.05
KVPT, FRESNO, CA	40	DTV	1184412	0.5	444	0.04
DKLXVT, SAN JOSE, CA	41	DTV	4486000	0.5	2553	0.06
KKPX, SAN JOSE, CA	41	DTV	5761223	0.5	21431	0.37
K41AC, BEAR VALLEY SPRI	41	TV	4358000	0.5	0	0.00
DKLCS, LOS ANGELES, CA	41	DTV	12504000	0.5	0	0.00
KLCS, LOS ANGELES, CA	41	DTV	12649029	0.5	0	0.00



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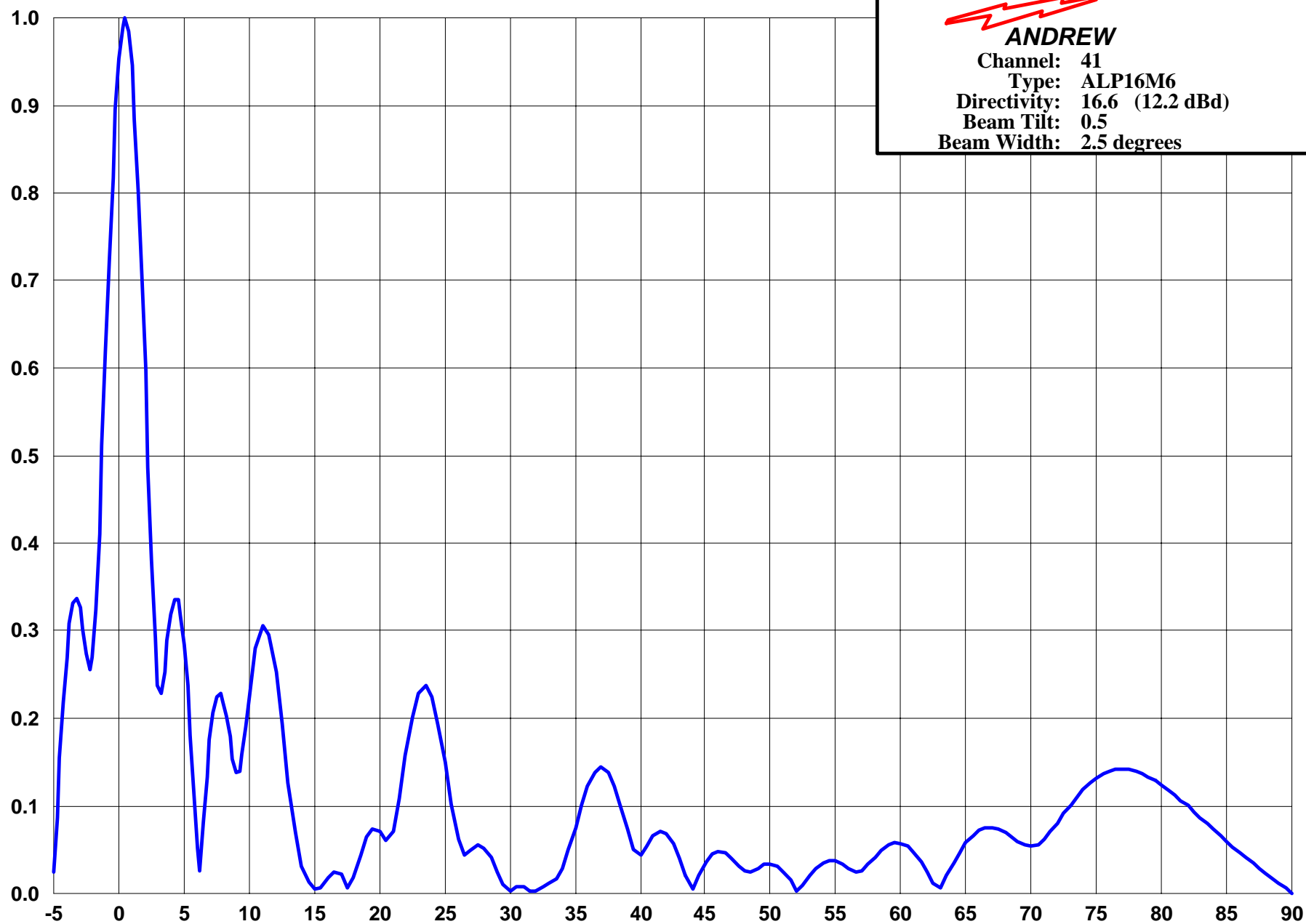
Channel: 41

Type: ALP16M6

Directivity: 16.6 (12.2 dBd)

Beam Tilt: 0.5

Beam Width: 2.5 degrees



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FIGURE 3