

TECHNICAL EXHIBIT  
APPLICATION FOR  
MODIFICATION OF CONSTRUCTION PERMIT  
(FCC FILE NO. BPTTL-19981102JD)  
CLASS A STATION KHPZ-LP  
FACILITY ID 35910  
ROUND ROCK, TEXAS  
CH 15        10.6 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 of Class A TV station KHPZ-LP at Round Rock, Texas (Facility ID: 35910; File No. BPTTL-19981102JD).<sup>1</sup> Specifically, this application proposes to change transmitter site, increase the antenna radiation center height above mean sea level from 350 meters to 395 meters, decrease the effective radiated power (ERP) from 10.8 kW to 10.6 kW and modify the antenna system. No other changes are proposed, including no change in channel (15), frequency offset designation (z) or community of license (Round Rock). As detailed below, 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 an existing 152 meter supporting structure (Antenna Structure Registration Number 1204250). 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 KHPZ-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.

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<sup>1</sup> Station KHPZ-LP's authorized facilities were specified in the application for Class A license, BLTTA-20001207ADP which was granted on January 19, 2001.

Analog TV Broadcast Station Protection

A study has been conducted using the provisions of Section 74.705 which indicates that the proposed KHPZ-LP operation will not create prohibited interference to other existing, authorized or proposed NTSC full-power stations with the exception of the licensed operation (BLCT-19910916KE) of KXAM-TV on first lower adjacent channel 14 at Llano, Texas. However, based on the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.705(e)], including the effect of "masking" by other full-service NTSC and DTV stations, it is believed that KHPZ-LP's operation complies with the FCC's interference criteria towards KXAM-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 2 and, as indicated, the proposal complies with the FCC's 0.5% interference threshold towards KXAM-TV.<sup>2</sup> Therefore, it is believed that the proposed KHPZ-LP operation complies with the FCC's interference criteria towards KXAM-TV.<sup>3</sup>

DTV Station and DTV Table of Allotments Protection

Calculations based on OET Bulletin No. 69 indicate that the proposed KHPZ-LP operation on channel 15 complies with the FCC's 0.5% interference threshold criteria to all allotted, proposed or actual DTV operating facilities on channels 14, 15 and 16. Figure 3 provides the output of study based on OET-69 Bulletin.

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<sup>2</sup> 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.

<sup>3</sup> It is noted that both KHPZ-LP and KXAM-TV are owned by KXAN, Inc. which agrees to accept any interference which occurs from KHPZ-LP to KXAM.

LPTV/TV Translator, Class A and Digital Class A Protection

A study has been conducted which indicates that the KHPZ-LP proposal will not create prohibited interference to other existing, authorized or proposed LPTV, TV Translator, Class A and Digital Class A stations.

Land Mobile Station Protection

The proposed KHPZ-LP operation does not cause interference to land mobile radio stations (LMRS).

Environmental Considerations

The proposed KHPZ-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 power density at the base of the tower was calculated using the appropriate equation on Page 13 of the Bulletin. As shown on Figure 4, the vertical plane field values at depression angles toward the tower base ( $-60^{\circ}$  to  $-90^{\circ}$  elevation) are less than 0.2. Therefore, using a greater than expected vertical relative field value of 0.2, a maximum visual effective radiated power of 10.6 kilowatts and 10 percent aural power, the calculated power density at 2 meters above ground level at the base of the tower is 0.0004 milliwatt per square centimeter ( $\text{mW}/\text{cm}^2$ ), or less than 5 percent of the Commission's recommended limit applicable to general population/uncontrolled exposure areas ( $0.32 \text{ mW}/\text{cm}^2$  for TV channel 15). Therefore, based on the new 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 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.

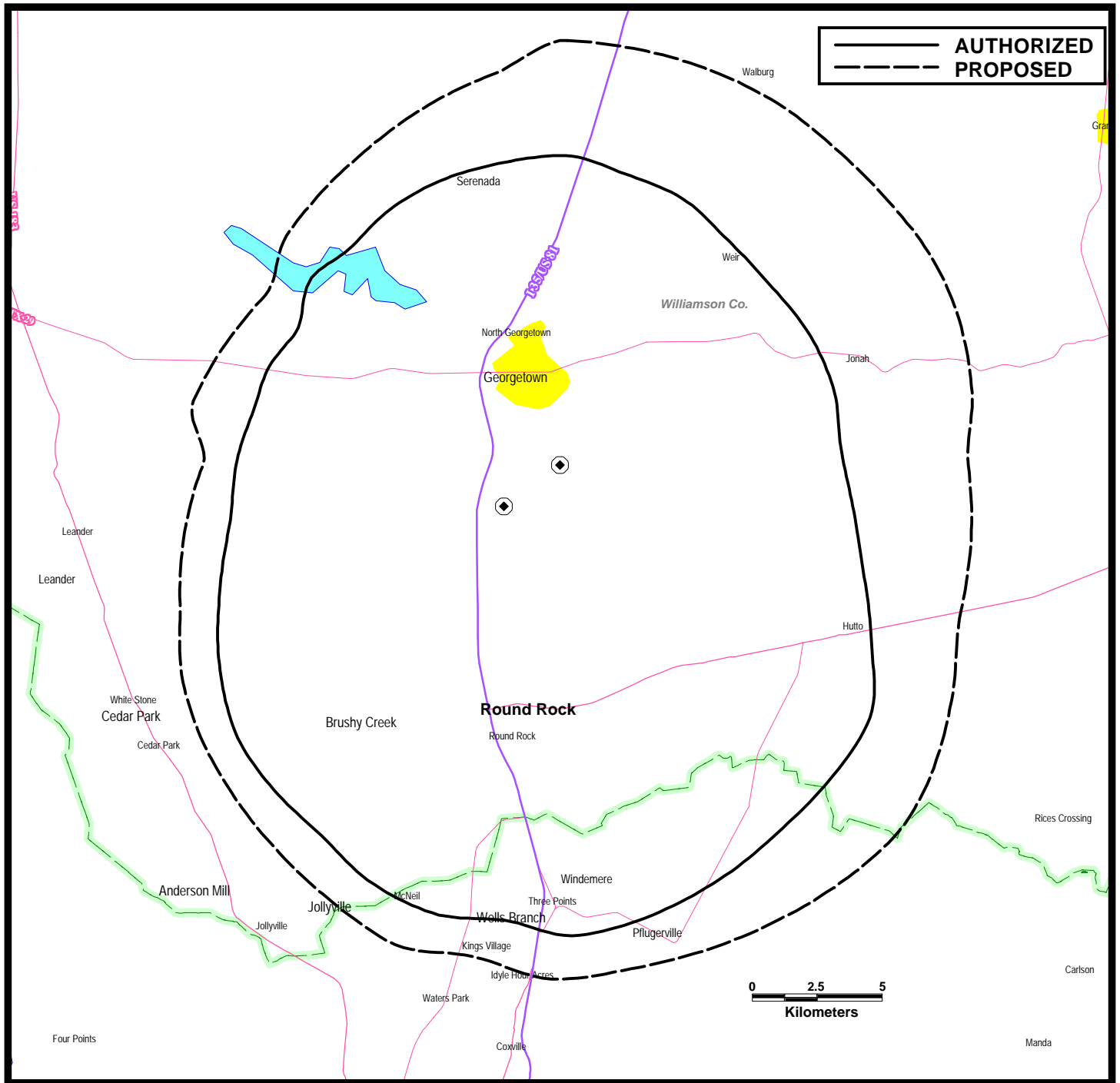
In addition, it appears that the existing tower is otherwise excluded from environmental processing as it complies with all the criteria for such an exclusion in Section 1.1306.

W. Jeffrey Reynolds

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December 10, 2001

FIGURE 1



**PREDICTED 74 DBU CONTOURS  
CLASS A STATION KHPZ-LP  
ROUND ROCK, TEXAS  
CH 15 10.6 KW (MAX-DA)**

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DKERAT	32-34-43	096-57-12	14(0)	484.600 kw	666	m DA	10.0 %	38.7 dBu			
DALLAS	TX 37811		4200	DTVSERVICE: 4200000		NTSCSERVICE: 4145000					
DTVALT	DTV ALLOTMENT										
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1.00	1.00	1.00	0.99	0.99	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	1.00	1.00	1.00	1.00	1.00
Ref Az:		0.0									

Using DEFAULT vertical antenna pattern

D/U Baseline: 34.00

	<b>Area</b>	<b>Pop</b>
<b>Interference</b>	<b>1965.88</b>	<b>74969(26.2 FCC - 26.2)</b>

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KETH 29-33-25 095-30-04 14(Z) 4470.000 kw 454 m DA 10.0 % 61.7 dBu  
HOUSTON TX 25619 3781 FCC NTSC BL: 3783542 FCC IX POP%: 0.0  
LIC BLET19870708KF

0.96	0.98	0.99	1.00	0.99	0.98	0.96	0.94	0.90	0.88	0.85	0.82
0.76	0.69	0.59	0.47	0.36	0.30	0.33	0.38	0.43	0.45	0.43	0.38
0.33	0.30	0.36	0.47	0.59	0.69	0.76	0.82	0.85	0.88	0.90	0.94

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 28.00

	<b>Area</b>	<b>Pop</b>
<b>Interference</b>	<b>887.04</b>	<b>76927(26.8 FCC - 26.9)</b>

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KLRU 30-19-20 097-48-10 18(+) 1860.000 kw 574 m DA 10.0 % 62.1 dBu  
AUSTIN TX 18352 904 FCC NTSC BL: 910288 FCC IX POP%: 0.8  
LIC BLET19790424KG

0.74	0.87	0.96	1.00	0.96	0.88	0.76	0.65	0.58	0.56	0.58	0.65
0.74	0.88	0.96	1.00	0.96	0.87	0.75	0.65	0.58	0.55	0.57	0.65
0.75	0.88	0.97	1.00	0.96	0.87	0.75	0.65	0.57	0.55	0.58	0.65

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -23.00

	<b>Area</b>	<b>Pop</b>
<b>Interference</b>	<b>775.16</b>	<b>105009(36.6 FCC - 36.7)</b>

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DKXANT 30-19-33 097-47-58 21(0) 158.200 kw 597 m DA 10.0 % 39.4 dBu  
AUSTIN TX 25028 1084 DTVSERVICE: 1084000 NTSCSERVICE: 1044000  
DTVALT DTV ALLOTMENT

0.94	0.94	0.94	0.94	0.94	0.95	0.95	0.95	0.96	0.97	0.97	0.98
0.99	1.00	1.00	0.99	0.98	0.97	0.96	0.95	0.95	0.94	0.94	0.94
0.94	0.95	0.95	0.96	0.95	0.95	0.95	0.95	0.95	0.94	0.94	0.94

(136.0 1.00)

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -34.00

	<b>Area</b>	<b>Pop</b>
<b>Interference</b>	<b>11.99</b>	<b>6714( 2.3 FCC - 2.3)</b>

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lost to NTSC IX	1274.62	116481
lost to additional IX by DTV	1362.53	11880
total lost to DTV IX	1965.88	74969

CallSign	No.cells	Unq Area	Unq Pop
DKERAT	341	1362.529	11880
KETH	42	167.8188	1922
KLRU	86	343.6289	32255

lost to all IX	2637.15	128361
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Total SERVICE	16070.64	110412
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**All interference from the study station was masked.**



OET-69 DTV INTERFERENCE CAUSED

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

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KAVU-T 28-50-26 097-07-47 15(N) 900.000 kw 350 m 90.0 % 38.8 dBu  
VICTORIA TX 16145 165 DTVSERVICE: 165000 NTSCSERVICE: 164000  
APP BPCDT19991021ACQ

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	32410.49	290080
not affected by terrain losses	32370.32	289910

\*\*\*\*\*

KHPZ-P 30-36-04 097-39-14 15(Z) 10.600 kw 395 m DA 10.0 % 71.8  
ROUND ROCK TX  
CP BPTTL19981102JD

1.00	0.99	0.98	0.95	0.92	0.87	0.82	0.77	0.71	0.67	0.63	0.61
0.60	0.61	0.62	0.64	0.66	0.67	0.68	0.67	0.66	0.64	0.62	0.61
0.60	0.61	0.63	0.67	0.71	0.77	0.82	0.87	0.92	0.95	0.98	0.99

Ref Az: 195.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	32.13	91( 0.0 FCC - 0.1)

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DKAVUT 28-48-06 096-33-09 15(0) 52.300 kw 320 m DA 90.0 % 38.8 dBu  
VICTORIA TX 16145 165 DTVSERVICE: 165000 NTSCSERVICE: 164000  
DTVALT DTV ALLOTMENT

0.67	0.57	0.47	0.35	0.26	0.20	0.20	0.27	0.32	0.32	0.32	0.27
0.20	0.20	0.26	0.36	0.47	0.57	0.67	0.73	0.77	0.81	0.86	0.89
0.93	0.96	0.99	1.00	0.99	0.96	0.93	0.89	0.86	0.81	0.77	0.73

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	16144.47	164612
not affected by terrain losses	16144.47	164612

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KHPZ-P 30-36-04 097-39-14 15(Z) 10.600 kw 395 m DA 10.0 % 71.8  
ROUND ROCK TX  
CP BPTTL19981102JD

1.00	0.99	0.98	0.95	0.92	0.87	0.82	0.77	0.71	0.67	0.63	0.61
0.60	0.61	0.62	0.64	0.66	0.67	0.68	0.67	0.66	0.64	0.62	0.61
0.60	0.61	0.63	0.67	0.71	0.77	0.82	0.87	0.92	0.95	0.98	0.99

Ref Az: 195.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

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DKGNST 27-40-21 099-39-51 15(0) 526.400 kw 463 m DA 90.0 % 38.8 dBu  
LAREDO TX 26393 140 DTVSERVICE: 140000 NTSCSERVICE: 137000  
DTVALT DTV ALLOTMENT

0.93	0.99	1.00	0.97	0.89	0.79	0.72	0.67	0.68	0.72	0.74	0.75
0.72	0.68	0.64	0.63	0.67	0.76	0.86	0.94	0.97	0.96	0.90	0.81
0.73	0.67	0.68	0.71	0.75	0.77	0.75	0.73	0.69	0.69	0.75	0.83

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	26421.03	140555
not affected by terrain losses	26417.02	140555

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KHPZ-P 30-36-04 097-39-14 15(Z) 10.600 kw 395 m DA 10.0 % 71.8  
ROUND ROCK TX  
CP BPTTL19981102JD

1.00	0.99	0.98	0.95	0.92	0.87	0.82	0.77	0.71	0.67	0.63	0.61
0.60	0.61	0.62	0.64	0.66	0.67	0.68	0.67	0.66	0.64	0.62	0.61
0.60	0.61	0.63	0.67	0.71	0.77	0.82	0.87	0.92	0.95	0.98	0.99

Ref Az: 195.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

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KGNS-T 27-40-21 099-39-51 15(N) 1000.000 kw 435 m 90.0 % 38.8 dBu  
LAREDO TX 26393 140 DTVSERVICE: 140000 NTSCSERVICE: 137000  
APP BPCDT19991026ABK

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	30630.12	150158
not affected by terrain losses	30594.06	150158

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KHPZ-P 30-36-04 097-39-14 15(Z) 10.600 kw 395 m DA 10.0 % 71.8  
ROUND ROCK TX  
CP BPTTL19981102JD

1.00	0.99	0.98	0.95	0.92	0.87	0.82	0.77	0.71	0.67	0.63	0.61
0.60	0.61	0.62	0.64	0.66	0.67	0.68	0.67	0.66	0.64	0.62	0.61
0.60	0.61	0.63	0.67	0.71	0.77	0.82	0.87	0.92	0.95	0.98	0.99

Ref Az: 195.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

\*\*\*\*\*

KJTL 34-12-05 098-43-45 15(N) 1000.000 kw 654 m DA 90.0 % 38.8 dBu  
WICHITA FALLS TX 17791 320 DTVSERVICE: 320000 NTSCSERVICE: 320000  
CP BPCDT19991102ABG

0.81	0.93	0.99	0.97	0.88	0.75	0.62	0.51	0.45	0.44	0.48	0.55
0.60	0.63	0.61	0.55	0.46	0.36	0.28	0.23	0.20	0.21	0.25	0.32

0.42 0.52 0.61 0.66 0.66 0.61 0.53 0.47 0.45 0.47 0.55 0.68

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	27009.92	382331
not affected by terrain losses	26666.45	378508

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KHPZ-P 30-36-04 097-39-14 15(Z) 10.600 kw 395 m DA 10.0 % 71.8

ROUND ROCK

TX

CP BPTTL19981102JD

1.00 0.99 0.98 0.95 0.92 0.87 0.82 0.77 0.71 0.67 0.63 0.61

0.60 0.61 0.62 0.64 0.66 0.67 0.68 0.67 0.66 0.64 0.62 0.61

0.60 0.61 0.63 0.67 0.71 0.77 0.82 0.87 0.92 0.95 0.98 0.99

Ref Az: 195.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

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DKJTL 34-12-06 098-43-44 15(0) 96.300 kw 654 m DA 90.0 % 38.8 dBu

WICHITA FALLS TX 17791 320 DTVSERVICE: 320000 NTSCSERVICE: 320000

DTVALT DTV ALLOTMENT

0.64 0.69 0.73 0.79 0.85 0.90 0.95 0.97 0.99 1.00 0.99 0.97

0.94 0.89 0.83 0.77 0.71 0.68 0.63 0.56 0.46 0.38 0.26 0.18

0.16 0.20 0.26 0.30 0.27 0.20 0.16 0.17 0.26 0.38 0.47 0.57

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	18162.52	320524
not affected by terrain losses	17986.65	320264

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KHPZ-P 30-36-04 097-39-14 15(Z) 10.600 kw 395 m DA 10.0 % 71.8

ROUND ROCK

TX

CP BPTTL19981102JD

1.00 0.99 0.98 0.95 0.92 0.87 0.82 0.77 0.71 0.67 0.63 0.61

0.60 0.61 0.62 0.64 0.66 0.67 0.68 0.67 0.66 0.64 0.62 0.61

0.60 0.61 0.63 0.67 0.71 0.77 0.82 0.87 0.92 0.95 0.98 0.99

Ref Az: 195.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

\*\*\*\*\*

KHCE 29-17-24 098-15-20 16(N) 500.000 kw 794.2 m 90.0 % 38.9 dBu

SAN ANTONIO TX 11425 1363 DTVSERVICE: 1363000 NTSCSERVICE: 1362000

APP BPEDT20000428ACF

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	45408.25	1873863
not affected by terrain losses	44448.41	1827587

\*\*\*\*\*

KHPZ-P 30-36-04 097-39-14 15(Z) 10.600 kw 395 m DA 10.0 % 71.8  
ROUND ROCK TX  
CP BPTTL19981102JD  
1.00 0.99 0.98 0.95 0.92 0.87 0.82 0.77 0.71 0.67 0.63 0.61  
0.60 0.61 0.62 0.64 0.66 0.67 0.68 0.67 0.66 0.64 0.62 0.61  
0.60 0.61 0.63 0.67 0.71 0.77 0.82 0.87 0.92 0.95 0.98 0.99  
Ref Az: 195.0  
Using DEFAULT vertical antenna pattern

D/U Baseline: -48.00

	Area	Pop
Interference	0	0

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DKHCE 29-31-25 098-43-25 16(0) 50.000 kw 573 m DA 90.0 % 38.9 dBu  
SAN ANTONIO TX 11425 1363 DTVSERVICE: 1363000 NTSCSERVICE: 1362000  
DTVALT DTV ALLOTMENT  
0.18 0.25 0.32 0.40 0.49 0.58 0.68 0.79 0.89 0.97 1.00 0.99  
0.96 0.88 0.77 0.66 0.55 0.46 0.37 0.30 0.24 0.18 0.14 0.11  
0.12 0.14 0.17 0.20 0.21 0.20 0.18 0.15 0.13 0.11 0.11 0.14  
Ref Az: 0.0  
Using DEFAULT vertical antenna pattern  
USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	11672.77	1366104
not affected by terrain losses	11521.07	1364300

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KHPZ-P 30-36-04 097-39-14 15(Z) 10.600 kw 395 m DA 10.0 % 71.8  
ROUND ROCK TX  
CP BPTTL19981102JD  
1.00 0.99 0.98 0.95 0.92 0.87 0.82 0.77 0.71 0.67 0.63 0.61  
0.60 0.61 0.62 0.64 0.66 0.67 0.68 0.67 0.66 0.64 0.62 0.61  
0.60 0.61 0.63 0.67 0.71 0.77 0.82 0.87 0.92 0.95 0.98 0.99  
Ref Az: 195.0  
Using DEFAULT vertical antenna pattern

D/U Baseline: -48.00

	Area	Pop
Interference	0	0

# SUMMARY OF CALCULATIONS

Facility	Channel	Type	Baseline	Permissible	IX	%Base
KAVU-T, VICTORIA, TX	15	DTV	165000	0.5	91	0.06
DKAVUT, VICTORIA, TX	15	DTV	165000	0.5	0	0.00
DKGNST, LAREDO, TX	15	DTV	140000	0.5	0	0.00
KGNS-T, LAREDO, TX	15	DTV	140000	0.5	0	0.00
KJTL, WICHITA FALLS, TX	15	DTV	320000	0.5	0	0.00
DKJTL, WICHITA FALLS, T	15	DTV	320000	0.5	0	0.00
KHCE, SAN ANTONIO, TX	16	DTV	1363000	0.5	0	0.00
DKHCE, SAN ANTONIO, TX	16	DTV	1363000	0.5	0	0.00



**ANDREW**

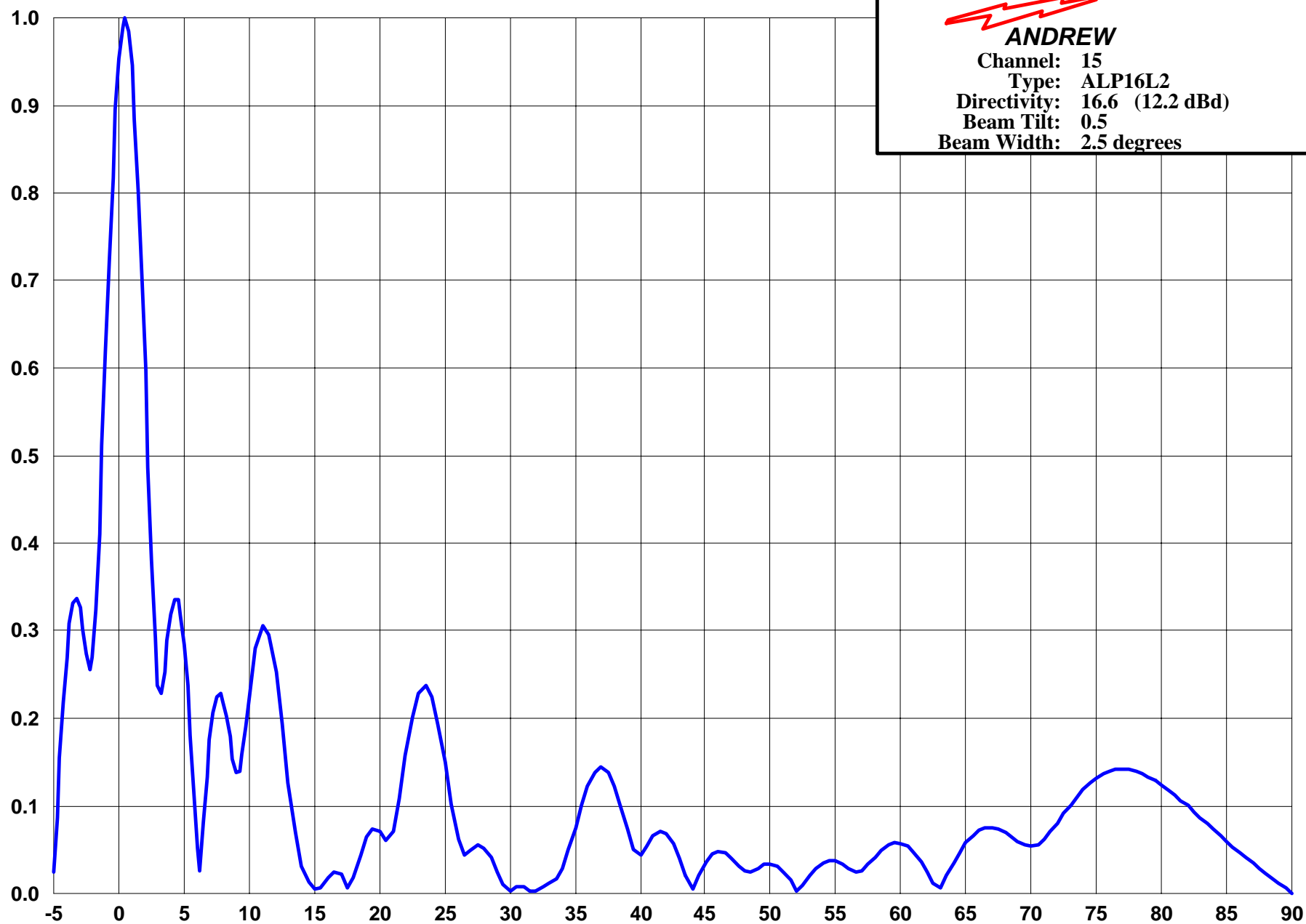
Channel: 15

Type: ALP16L2

Directivity: 16.6 (12.2 dBd)

Beam Tilt: 0.5

Beam Width: 2.5 degrees



ANDREW CORPORATION  
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Orland Park, Illinois U.S.A. 60462

FIGURE 4