

TECHNICAL EXHIBIT
AMENDMENT TO
DTV DISPLACEMENT RELIEF APPLICATION
FCC FILE NO. BPTTL-JG0601WP
FACILITY ID 47722
TV TRANSLATOR STATION W69DC
ASHEVILLE, NORTH CAROLINA
CH 50(Z) 21 KW (MAX-DA)

Technical Narrative

This technical exhibit was prepared in support of an amendment to the pending DTV displacement application of W69DC on channel 50 at Asheville, North Carolina, FCC File No. BPTTL-JG0601WL. The purpose of this amendment is to demonstrate that the proposed W69DC operation will comply with the FCC's interference criteria.

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 W69DC proposal will not create prohibited interference to other existing, authorized or proposed NTSC full-power stations.

Response to Paragraph 13(b) - DTV Station Protection

Calculations based on OET Bulletin No. 69 indicate that the proposed W69DC operation on channel 50 complies with the FCC's 0.5% interference threshold criteria to all allotted, proposed or actual DTV operating facilities on channels 49, 50 and 51.¹ Figure 1 provides the output of study based on OET-69 Bulletin which demonstrates that the proposed W69DC operation complies with the FCC's DTV interference criteria.

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 W69DC proposal will not create prohibited interference to other existing, authorized or proposed LPTV/TV translator stations with the exception of the

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.

licensed operations of W50AB on channel 50 at Hiawassee, GA (BLTT-20021204AAM) and W35AV on channel 35 at Black Mountain, NC (BLTT-19920323JI). However, based on consideration of terrain shielding and the provisions of the OET-69 Bulletin as permitted by FCC rules [Section 74.707(e)], it is believed that W69DC's operation complies with the FCC's interference criteria towards W50AB and W35AV. Specifically, calculations have been made using the procedures outlined in the FCC's OET-69 Bulletin and a 2 square kilometer grid. The interference calculations are summarized on Figure 1.

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OET-69 DTV AND LPTV INTERFERENCE CAUSED STUDY

CELL SIZE : 2.00
Using offset in determining thresholds

W35AV 35-34-04 082-23-02 35(Z) 0.590 kw 1372 m DA 50.0 % 73.7 dBu
BLACK MOUNTAIN NC
LIC BLTT19920323JI
1.00 0.96 0.97 0.99 0.89 0.69 0.40 0.15 0.03 0.03 0.03 0.03
0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03 0.03
0.03 0.03 0.03 0.03 0.03 0.15 0.40 0.69 0.89 0.99 0.97 0.96

Ref Az: 10.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	193.418121	17684
not affected by terrain losses	189.388580	17684

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0
ASHEVILLE NC
APP BPTTLJG0601WP
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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -9.00

	Area	Pop
Interference	0	0

WLFG 36-49-47 082-04-45 49(N) 1000.000 kw 1325 m 90.0 % 41.9 dBu
GRUNDY VA 14722 612 DTVSERVICE: 612000 NTSCSERVICE: 575000
CP BPCDT19991029AGK

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	46524.769531	1533753
not affected by terrain losses	35595.730469	1159849

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0
ASHEVILLE NC
APP BPTTLJG0601WP
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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00

	Area	Pop
Interference	0	0

DWLF 36-49-47 082-04-45 49(0) 50.000 kw 1325 m DA 90.0 % 41.9 dBu
GRUNDY VA 14722 612 DTVSERVICE: 612000 NTSCSERVICE: 575000
DTVALT DTV ALLOTMENT

0.57	0.42	0.35	0.34	0.34	0.28	0.16	0.17	0.14	0.14	0.15	0.18
0.28	0.33	0.35	0.35	0.37	0.49	0.65	0.79	0.91	0.97	1.00	0.96
0.82	0.65	0.55	0.51	0.53	0.63	0.77	0.92	0.98	0.95	0.88	0.74

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	18410.306641	744971
not affected by terrain losses	14878.516602	621063

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0
ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -49.00

	Area	Pop
Interference	0	0

W50AB 34-57-15 083-43-47 50(N) 1.050 kw 1051.8 m DA 50.0 % 75.0 dBu
HIAWASSEE GA

LIC BLTT20021204AAM

1.00	0.97	0.95	0.93	0.92	0.94	0.98	1.00	0.98	0.95	0.88	0.77
0.63	0.47	0.35	0.23	0.22	0.22	0.23	0.22	0.22	0.23	0.35	0.47
0.63	0.77	0.88	0.95	0.98	1.00	0.98	0.94	0.92	0.93	0.95	0.97

Ref Az: 180.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	385.312866	6918
not affected by terrain losses	361.230804	6552

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0
ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 45.00

	Area	Pop
Interference	0	0

WBXX-T 36-06-33 084-20-17 50(N) 375.000 kw 1205 m DA 90.0 % 42.0 dBu
CROSSVILLE TN 34644 1251 DTVSERVICE: 1251000 NTSCSERVICE: 1230000
LIC BLCDT20030423AAY

0.85	0.82	0.78	0.74	0.69	0.65	0.62	0.61	0.60	0.60	0.60	0.60
0.60	0.61	0.62	0.65	0.69	0.74	0.78	0.82	0.85	0.86	0.86	0.87
0.88	0.91	0.93	0.95	0.96	0.95	0.93	0.91	0.88	0.87	0.86	0.86

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	37520.433594	1322834
not affected by terrain losses	32933.535156	1199420

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0
ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

DWINT 36-06-33 084-20-17 50(0) 355.900 kw 1224 m DA 90.0 % 42.0 dBu
CROSSVILLE TN 34644 1251 DTVSERVICE: 1251000 NTSCSERVICE: 1230000
DTVALT DTV ALLOTMENT

0.95	0.93	0.91	0.90	0.91	0.91	0.91	0.94	0.97	0.99	0.99	0.99
0.99	0.99	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.98	0.97
0.95	0.92	0.90	0.91	0.91	0.91	0.91	0.91	0.90	0.91	0.93	0.94

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	40558.527344	1392097
not affected by terrain losses	35205.746094	1264394

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0
ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	12.02	27(0.0 FCC - 0.0)

DWAXN 35-15-41 080-43-38 50(0) 50.000 kw 517 m DA 90.0 % 42.0 dBu
KANNAPOLIS NC 15248 1477 DTVSERVICE: 1477000 NTSCSERVICE: 1497000
DTVALT DTV ALLOTMENT

0.99	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	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	0.99	0.99
0.98	0.98	0.97	0.96	0.96	0.96	0.96	0.97	0.97	0.98	0.98	0.99

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	16210.655273	1506764
not affected by terrain losses	16126.724609	1504874

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0

ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

WAXN 35-15-41 080-43-38 50(N) 50.000 kw 565 m 90.0 % 42.0 dBu

KANNAPOLIS NC 15248 1477 DTVSERVICE: 1477000 NTSCSERVICE: 1497000

LIC BLCDT20020426AAN

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	19244.177734	1669184
not affected by terrain losses	19012.367188	1661631

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0

ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	7.99	95(0.0 FCC - 0.0)

WOAY-T 37-57-26 081-09-03 50(N) 1000.000 kw 815.1 m 90.0 % 42.0 dBu

OAK HILL WV 22396 568 DTVSERVICE: 568000 NTSCSERVICE: 539000

CP BPCDT19991101AJZ

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	22961.296875	691018
not affected by terrain losses	19011.009766	529793

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0

ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

DWOAYT 37-57-30 081-09-03 50(0) 1000.000 kw 805 m DA 90.0 % 42.0 dBu
OAK HILL WV 22396 568 DTVSERVICE: 568000 NTSCSERVICE: 539000
DTVALT DTV ALLOTMENT

0.79	0.82	0.84	0.86	0.88	0.88	0.87	0.86	0.85	0.84	0.85	0.86
0.87	0.89	0.91	0.93	0.96	0.98	1.00	0.99	0.98	0.96	0.95	0.94
0.94	0.95	0.95	0.95	0.92	0.89	0.86	0.85	0.83	0.82	0.81	0.80

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	29068.689453	785703
not affected by terrain losses	22459.986328	576174

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0
ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

DWGNM 32-44-58 083-33-35 50(0) 50.000 kw 300 m DA 90.0 % 42.0 dBu
MACON GA 2523 254 DTVSERVICE: 254000 NTSCSERVICE: 253000
DTVALT DTV ALLOTMENT

0.55	0.44	0.38	0.32	0.27	0.23	0.19	0.10	0.07	0.08	0.12	0.15
0.16	0.18	0.16	0.15	0.12	0.08	0.07	0.10	0.19	0.24	0.27	0.33
0.39	0.45	0.56	0.67	0.78	0.90	0.98	1.00	0.98	0.89	0.78	0.67

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	2522.469238	253939
not affected by terrain losses	2522.469238	253939

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0
ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

WCBD-2 32-56-24 079-41-45 50(N) 1000.000 kw 565 m 90.0 % 42.0 dBu

CHARLESTON SC

GRANT BPRM20010827ABK

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	42520.371094	846447
not affected by terrain losses	42520.371094	846447

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0

ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

WCBD-T 32-56-24 079-41-45 50(N) 1000.000 kw 565 m DA 90.0 % 42.0 dBu

CHARLESTON SC

CP MOD BMPCDT20020621AAK

0.94	0.92	0.89	0.86	0.81	0.74	0.65	0.53	0.42	0.34	0.32	0.37
0.43	0.47	0.47	0.43	0.37	0.32	0.34	0.42	0.53	0.65	0.74	0.81
0.86	0.89	0.92	0.94	0.96	0.98	0.99	1.00	1.00	0.99	0.98	0.96

(96.0 0.32)(135.0 0.47)(174.0 0.32)(315.0 1.00)

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	37221.085938	809823
not affected by terrain losses	37221.085938	809823

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0

ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: 2.00

	Area	Pop
Interference	0	0

WAGV 36-48-00 083-22-36 51(N) 550.000 kw 1133 m 90.0 % 42.0 dBu

HARLAN KY 18668

547 DTVSERVICE: 547000 NTSCSERVICE: 475000

CP MOD BMPCDT20030411AAT

Using DEFAULT vertical antenna pattern

	Area	Pop
within Noise Limited Contour	38867.109375	1397156
not affected by terrain losses	33781.769531	1109322

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0

ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

Using DEFAULT vertical antenna pattern

D/U Baseline: -48.00

	Area	Pop
Interference	0	0

DWAGV 36-48-00 083-22-36 51(0) 50.000 kw 1155 m DA 90.0 % 42.0 dBu

HARLAN KY 18668 547 DTVSERVICE: 547000 NTSCSERVICE: 475000

DTVALT DTV ALLOTMENT

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

(46.0 1.00)

Ref Az: 0.0

Using DEFAULT vertical antenna pattern

USING NTSC GRADE B FOR SERVICE AREA

	Area	Pop
within Noise Limited Contour	23770.189453	716145
not affected by terrain losses	18957.500000	556754

W69DC 35-35-23 082-40-26 50(Z) 21.000 kw 1088 m DA 10.0 % 75.0

ASHEVILLE NC

APP BPTTLJG0601WP

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: 192.0

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
W35AV, BLACK MOUNTAIN,	35	TV	17684	0.5	0	0.00
WLFG, GRUNDY, VA	49	DTV	1533753	0.5	0	0.00
DWLFG, GRUNDY, VA	49	DTV	744971	0.5	0	0.00
W50AB, HIAWASSEE, GA	50	TV	6918	0.5	0	0.00
WBXX-T, CROSSVILLE, TN	50	DTV	1322834	0.5	0	0.00
DWINT, CROSSVILLE, TN	50	DTV	1392097	0.5	27	0.00
DWAXN, KANNAPOLIS, NC	50	DTV	1506764	0.5	0	0.00
WAXN, KANNAPOLIS, NC	50	DTV	1669184	0.5	95	0.01
WOAY-T, OAK HILL, WV	50	DTV	691018	0.5	0	0.00
DWOAYT, OAK HILL, WV	50	DTV	785703	0.5	0	0.00
DWGNM, MACON, GA	50	DTV	253939	0.5	0	0.00
WCBD-2, CHARLESTON, SC	50	DTV	846447	0.5	0	0.00
WCBD-T, CHARLESTON, SC	50	DTV	809823	0.5	0	0.00
WAGV, HARLAN, KY	51	DTV	1397156	0.5	0	0.00
DWAGV, HARLAN, KY	51	DTV	716145	0.5	0	0.00