

ENGINEERING EXHIBIT

Digital Television Translator Station Application for Minor Modification of Licensed Facility prepared for

University of North Carolina
W31DI-D Spruce Pine, NC
Facility ID 69347
Ch. 31 4.8 kW Directional

University of North Carolina (“UNC”) is the licensee of digital television translator station W31DI-D, Channel 31, Facility ID 69347, Spruce Pine NC. W31DI-D is licensed to operate (file# BLDTT-20090506ABZ) with 0.5 kW effective radiated power (“ERP”), directional. *UNC* herein seeks a minor modification Construction Permit to increase W31DI-D’s ERP to 4.8 kW. No change in site location, antenna, or antenna height is proposed.

The existing W31DI-D antenna supporting structure is not registered as the overall structure height is less than 61 meters above ground and passes the FCC’s TOWAIR program for the tower location. The proposed facility will employ the licensed W31DI-D antenna and no change to the overall structure height is proposed.

The proposed ERP is 4.8 kW using a “full service” out of channel emission mask. The W31DI-D transmitting antenna is a side-mounted ERI model ALP8L8-HSPR-31 having horizontal polarization. A plot of the directional antenna’s azimuthal pattern is supplied in Figure 1. The amount of electrical beamtilt is corrected herein to 2.0 degrees. Figure 2 depicts the 51 dBμ coverage contours of the proposed and licensed facilities. The use of the same site and corresponding service area overlap demonstrate compliance with §73.3572 for a minor change.

Interference study per OET Bulletin 69¹ shows that the proposal complies with the FCC’s interference protection requirements toward all digital television, television translator, LPTV, and

¹FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 (“OET-69”). This analysis employed the FCC’s current “TVStudy” software with the default application processing template settings, 1 km cell size, and 1 km terrain increment.

Class A stations. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility.

Human Exposure to Radiofrequency Electromagnetic Field

The proposed facility was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number. 65. Based on OET-65 equation (10) and considering 25 percent antenna relative field in downward elevations (pattern data shows less than 25 percent relative field at angles 15 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $10.4 \mu\text{W}/\text{cm}^2$, which is 2.7 percent of the general population/uncontrolled maximum permitted exposure limit. This is below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. This exhibit is limited to the evaluation of exposure to RF electromagnetic field. No increase in structure height is proposed.

List of Attachments

Figure 1	Antenna Azimuthal Pattern
Figure 2	Coverage Contour Comparison
Table 1	TVStudy Analysis of Proposal
Form 2100	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E.	December 14, 2020	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600

**Azimuth Pattern - Relative Field
(True North)**

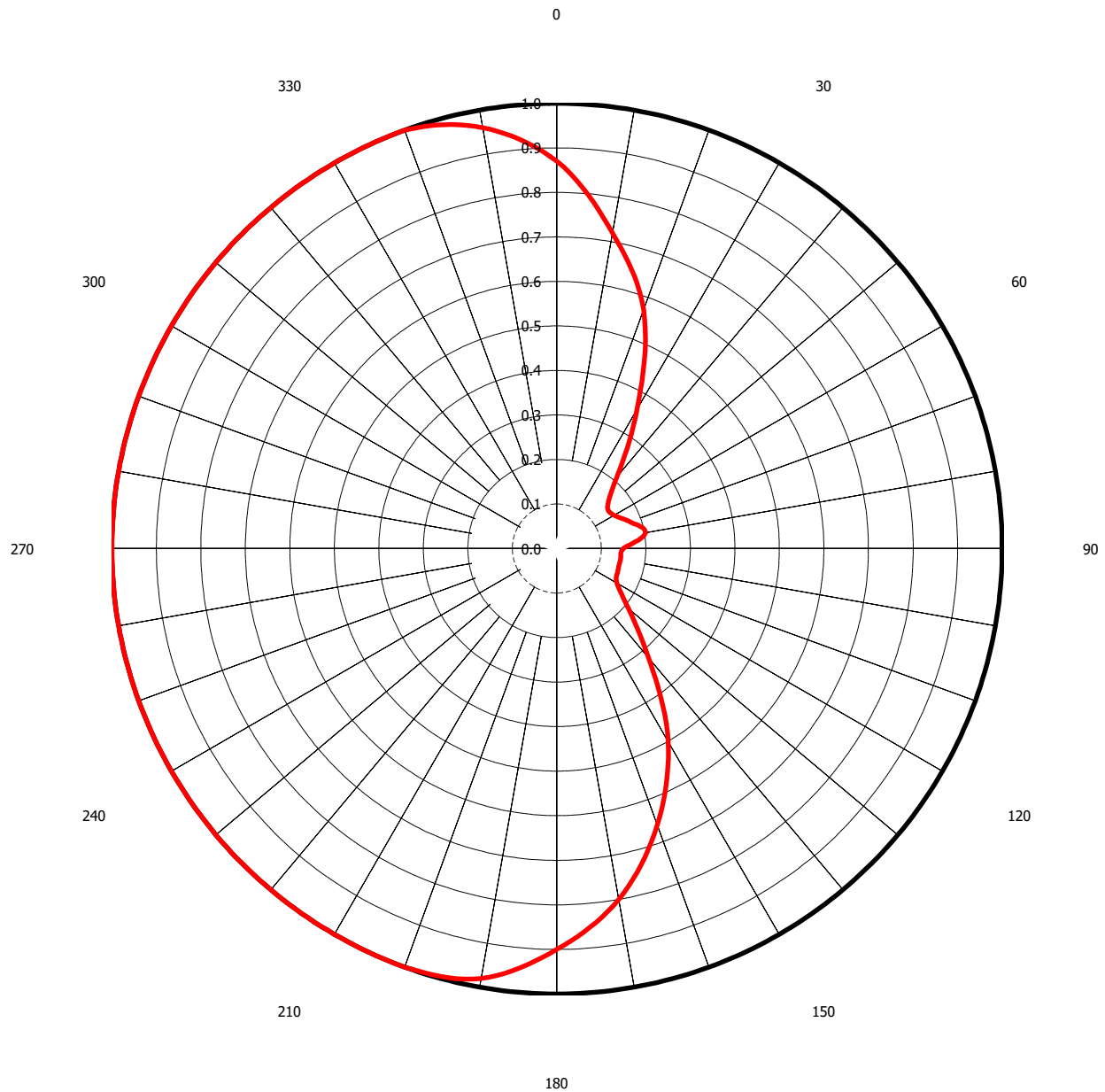


Figure 1
Antenna Azimuthal Pattern
W31DI-D Spruce Pine, NC
Facility ID 69347
Ch. 31 4.8 kW Directional

prepared for
University of North Carolina

December, 2020



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 2
Coverage Contour Comparison
W31DI-D Spruce Pine, NC
Facility ID 69347
Ch. 31 4.8 kW Directional

prepared for
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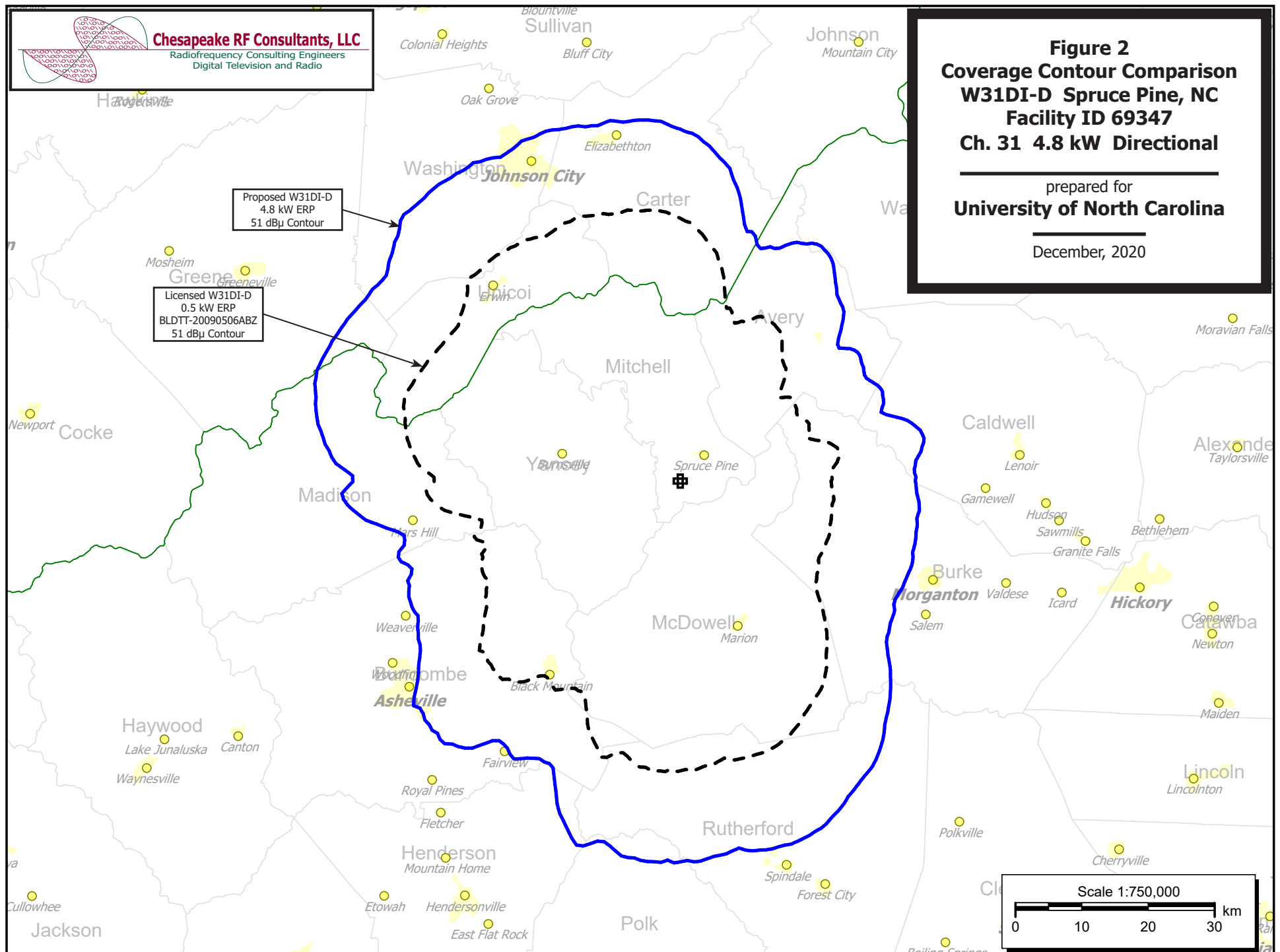


Table 1 W31DI-D TVStudy Analysis of Proposal (page 1 of 6)



tvstudy v2.2.5 (4uoc83)
Database: localhost, Study: W31DI-D prop 4.8kW, Model: Longley-Rice
Start: 2020.12.14 12:04:44

Study created: 2020.12.14 12:04:43

Study build station data: LMS TV 2020-12-11

Proposal: W31DI-D D31 LD APP SPRUCE PINE, NC
File number: W31DI-D prop 4.8kW
Facility ID: 69347
Station data: User record
Record ID: 3401
Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	W30DX-D	D30	LD	LIC	BRYSON CITY, ETC, NC	BLANK0000119378	136.3 km
No	W30EF-D	D30	LD	LIC	JEFFERSON, NC	BLANK0000107212	85.0
No	WAXN-TV	D30	LD	LIC	KANNAPOLIS, NC	BLANK0000119096	136.9
No	W30CS-D	D30	LD	LIC	ZIONVILLE, NC	BLD TT20090615AAL	58.2
Yes	WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000081030	96.7
No	W45DF-D	D30	LD	CP	KNOXVILLE, TN	BLANK0000114382	167.1
Yes	WCYB-TV	D30	DT	APP	BRISTOL, VA	BLANK0000127663	63.3
No	WDBJ	D30	DT	LIC	ROANOKE, VA	BLANK0000094109	227.3
No	WPCH-TV	D31	DT	LIC	ATLANTA, GA	BLANK0000081575	307.6
No	WSB-TV	D31	LD	LIC	ATLANTA, GA	BLCDT20100429ADZ	265.2
No	WMUB-LD	D31	LD	CP	WARNER ROBINS, GA	BLANK0000054344	371.1
No	W31DH-D	D31	LD	LIC	FRANKLIN, ETC, NC	BLD TT20090615AAP	127.1
Yes	WDKT-LD	N31-	TX	LIC	HENDERSONVILLE, NC	BLTTL19940525JJ	76.9
Yes	WGHP	D31	DT	LIC	HIGH POINT, NC	BLANK0000116302	204.1
No	W31ER-D	D31	LD	CP	LUMBERTON, NC	BLANK0000071883	308.7
No	W31AN-D	D31	LD	LIC	MURPHY, NC	BLD TT20090615AAV	194.3
No	W31DR-D	D31	LD	CP	WILMINGTON, NC	BNPDTL20100422AAO	414.8
No	WDTN	D31	DT	LIC	DAYTON, OH	BLANK0000126718	466.6
No	WJOS-LD	D31	LD	CP	POMEROY, OH	BLANK0000054745	350.9
No	WTZP-LD	D31	LD	LIC	PORTSMOUTH, OH	BLANK0000074508	331.3
No	W31EM-D	D31	LD	LIC	MYRTLE BEACH, SC	BLANK0000118241	376.7
No	WJNI-LD	D31	LD	LIC	NORTH CHARLESTON, SC	BLD TL20100916ADG	375.9
Yes	W31DY-D	D31	LD	LIC	PICKENS, SC	BLANK0000119379	108.0
Yes	WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	230.9
Yes	WBXX-TV	D31	DT	LIC	CROSSVILLE, TN	BLANK0000081641	202.5
No	WUDJ-LD	D31	LD	LIC	CROZET, VA	BLANK0000080576	398.0
No	WOAY-TV	D31	DT	LIC	OAK HILL, WV	BLANK0000096583	246.0
No	W11DD-D	D32	LD	CP	HARTWELL & ROYSTON, GA	BLANK0000053811	190.0
No	W32FI-D	D32	LD	LIC	BREVARD, NC	BLANK0000074959	93.6
No	WAXN-TV	D32	DT	LIC	KANNAPOLIS, NC	BLANK0000081193	142.3
No	W32EO-D	D32	LD	LIC	TRYON, ETC., NC	BLANK0000119355	69.4
Yes	WKPT-TV	D32	DT	LIC	KINGSPORT, TN	BLANK0000070485	61.4
No	WEEE-LP	N32+	TX	CP	KNOXVILLE, TN	BP TTL20120508ADS	167.1
No	WEEE-LP	N32+	TX	LIC	KNOXVILLE, TN	BLTT19980717JA	172.9
No	WEEE-LP	D32	LD	CP	KNOXVILLE, TN	BMPDTA20120605AAP	167.1

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D31
Mask: Full Service
Latitude: 35 52 47.40 N (NAD83)
Longitude: 82 6 16.40 W
Height AMSL: 1304.0 m
HAAT: 0.0 m
Peak ERP: 4.80 kW

Table 1 W31DI-D TVStudy Analysis of Proposal
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Antenna: ERI-ALP8L8-HSPR-31 (ID 81570) 0.0 deg
Elev Pattn: Generic
Elec Tilt: 2.00

50.4 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	3.63 kW	413.5 m	53.7 km
45.0	0.155	434.2	35.3
90.0	0.108	532.7	36.0
135.0	0.337	682.8	45.5
180.0	3.89	533.8	57.9
225.0	4.80	367.9	53.5
270.0	4.80	299.2	50.0
315.0	4.80	502.9	58.4

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 471 m

Distance to Canadian border: 644.8 km

Distance to Mexican border: 1787.5 km

Conditions at FCC monitoring station: Powder Springs GA
Bearing: 227.6 degrees Distance: 327.6 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 290.1 degrees Distance: 2072.8 km

Study cell size: 1.00 km
Profile point spacing: 1.00 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLANK0000081030 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000081030	
Undesireds:	W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	96.7 km
	WYGA-CD	D29	DC	APP	ATLANTA, GA	BLANK0000127583	221.2
	WKOP-TV	D29	DT	LIC	KNOXVILLE, TN	BLANK0000081273	156.7
	WAGT-CD	D30	DC	LIC	AUGUSTA, GA	BLANK0000063630	202.5
	WMGT-TV	D30	DT	LIC	MACON, GA	BLANK0000075816	276.6
	WKMR	D30	DT	LIC	MOREHEAD, KY	BLANK0000075044	348.1
	WUNU	D30	DT	LIC	LUMBERTON, NC	BLANK0000114990	326.3
	W30CV-D	D30	DC	CP	HILTON HEAD ISLAND, SC	BLANK0000127486	359.2
	WCYB-TV	D30	DT	APP	BRISTOL, VA	BLANK0000127663	155.3
	WDBJ	D30	DT	LIC	ROANOKE, VA	BLANK0000094109	319.3
	WPCH-TV	D31	DT	LIC	ATLANTA, GA	BLANK0000081575	215.0
	WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	201.6
	WBXX-TV	D31	DT	LIC	CROSSVILLE, TN	BLANK0000081641	191.8

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
45301.7 2,629,601	40241.2 2,421,024	39055.5 2,378,396	39029.4 2,377,644	0.07 0.03

Undesired	Total IX	Unique IX, before	Unique IX, after
W31DI-D D31 LD APP	43.1 2,214	26.1 752	
WKOP-TV D29 DT LIC	24.8 0	5.9 0	
WAGT-CD D30 DC LIC	536.6 6,343	488.8 5,805	
WMGT-TV D30 DT LIC	65.9 1,750	33.0 1,129	
WKMR D30 DT LIC	14.0 24	2.0 0	
WUNU D30 DT LIC	103.6 8,995	51.9 5,616	
WCYB-TV D30 DT APP	338.5 12,481	254.8 8,357	
WDBJ D30 DT LIC	274.6 20,710	195.9 14,944	
WPCH-TV D31 DT LIC	1.0 6	1.0 6	
WKTC D31 DT LIC	1.0 35	0.0 0	
WBXX-TV D31 DT LIC	8.9 0	3.0 0	

Table 1 W31DI-D TVStudy Analysis of Proposal
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Interference to BLANK0000127663 APP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WCYB-TV	D30	DT	APP	BRISTOL, VA	BLANK0000127663	
Undesireds:	W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	63.3 km
	WKOP-TV	D29	DT	LIC	KNOXVILLE, TN	BLANK0000081273	173.2
	WAGT-CD	D30	DC	LIC	AUGUSTA, GA	BLANK0000063630	339.2
	WKPC-TV	D30	DT	LIC	LOUISVILLE, KY	BLANK0000087420	391.7
	WKMR	D30	DT	LIC	MOREHEAD, KY	BLANK0000075044	223.6
	WUNU	D30	DT	LIC	LUMBERTON, NC	BLANK0000114990	332.1
	WHIZ-TV	D30	DT	LIC	ZANESVILLE, OH	BLANK0000125049	386.8
	WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000081030	155.3
	WDBJ	D30	DT	LIC	ROANOKE, VA	BLANK0000094109	192.4
	WBXX-TV	D31	DT	LIC	CROSSVILLE, TN	BLANK0000081641	203.4
	WOAY-TV	D31	DT	LIC	OAK HILL, WV	BLANK0000096583	187.8
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
42775.2 1,866,500		31084.6 1,215,683		28514.6 1,154,812		28497.4 1,154,582	0.06 0.02
Undesired		Total IX		Unique IX, before		Unique IX, after	
W31DI-D D31 LD APP		38.2	471			17.2 230	
WKOP-TV D29 DT LIC		108.0	7,654	40.3	2,862	40.3 2,862	
WAGT-CD D30 DC LIC		4.0	0	1.0	0	1.0 0	
WKPC-TV D30 DT LIC		6.0	2	0.0	0	0.0 0	
WKMR D30 DT LIC		442.0	8,391	207.7	4,457	207.7 4,457	
WUNU D30 DT LIC		93.7	3,618	12.1	221	12.1 221	
WHIZ-TV D30 DT LIC		3.1	0	0.0	0	0.0 0	
WYFF D30 DT LIC		905.8	18,990	377.3	7,762	376.3 7,762	
WDBJ D30 DT LIC		1687.8	35,195	1146.3	23,541	1132.2 23,300	
WBXX-TV D31 DT LIC		142.2	8,486	76.6	3,625	76.6 3,625	
WOAY-TV D31 DT LIC		2.0	24	0.0	0	0.0 0	

Interference to BLTTL19940525JJ LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WDKT-LD	N31-	TX	LIC	HENDERSONVILLE, NC	BLTTL19940525JJ	
Undesireds:	W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	76.9 km
	WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000081030	21.3
	WGHP	D31	DT	LIC	HIGH POINT, NC	BLANK0000116302	243.1
	W31DY-D	D31	LD	LIC	PICKENS, SC	BLANK0000119379	33.6
	WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	197.5
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
777.2 126,507		629.0 109,530		566.3 102,954		555.3 102,231	1.94 0.70
Undesired		Total IX		Unique IX, before		Unique IX, after	
W31DI-D D31 LD APP		19.9	1,316			11.0 723	
WYFF D30 DT LIC		43.8	5,544	30.9	5,297	29.9 5,136	
WGHP D31 DT LIC		4.0	142	1.0	17	0.0 0	
W31DY-D D31 LD LIC		28.9	1,137	14.9	1,011	13.9 836	
WKTC D31 DT LIC		3.0	4	0.0	0	0.0 0	

Interference to BLANK0000116302 LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WGHP	D31	DT	LIC	HIGH POINT, NC	BLANK0000116302	
Undesireds:	W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	204.1 km
	WUNU	D30	DT	LIC	LUMBERTON, NC	BLANK0000114990	134.0
	WDBJ	D30	DT	LIC	ROANOKE, VA	BLANK0000094109	156.2
	WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	206.5
	WHRO-TV	D31	DT	LIC	HAMPTON-NORFOLK, VA	BLANK0000120642	318.8
	WOAY-TV	D31	DT	LIC	OAK HILL, WV	BLANK0000096583	265.3
	WAXN-TV	D32	DT	LIC	KANNAPOLIS, NC	BLANK0000081193	100.9
	WRPX-TV	D32	DT	LIC	ROCKY MOUNT, NC	BLANK0000081831	152.9
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX

Table 1 W31DI-D TVStudy Analysis of Proposal
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36117.0 4,172,169 35479.6 4,124,304 33608.8 3,725,607 33551.1 3,718,216 0.17 0.20

Undesired		Total IX	Unique IX, before	Unique IX, after
W31DI-D D31 LD APP	119.4	33,211	57.7	7,391
WUNU D30 DT LIC	521.5	24,888	449.5	21,996
WDBJ D30 DT LIC	142.5	10,508	138.5	10,202
WKTC D31 DT LIC	318.8	55,952	132.1	6,845
WHRO-TV D31 DT LIC	217.2	49,654	97.6	10,225
WOAY-TV D31 DT LIC	6.0	57	1.0	0
WAXN-TV D32 DT LIC	673.0	238,865	568.2	193,143
WRPX-TV D32 DT LIC	293.2	106,731	191.5	68,527

Interference to BLANK0000119379 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	W31DY-D	D31	LD	LIC	PICKENS, SC	BLANK0000119379	
Undesireds:	W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	108.0 km
	WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000081030	26.0
	WPCH-TV	D31	DT	LIC	ATLANTA, GA	BLANK0000081575	217.2
	WSB-TV	D31	LD	LIC	ATLANTA, GA	BLCDT20100429ADZ	168.6
	W31DH-D	D31	LD	LIC	FRANKLIN, ETC, NC	BLDTT20090615AAP	94.5
	WDKT-LD	N31-	TX	LIC	HENDERSONVILLE, NC	BLTTL19940525JJ	33.6
	WGHP	D31	DT	LIC	HIGH POINT, NC	BLANK0000116302	252.2
	WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	176.5
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
3927.2		663,731		3720.6		655,390	2609.7
						449,428	2574.8
						445,855	1.34
							0.80

Undesired		Total IX	Unique IX, before	Unique IX, after
W31DI-D D31 LD APP	157.0	29,914	35.0	3,573
WYFF D30 DT LIC	1085.0	205,217	923.9	177,879
WPCH-TV D31 DT LIC	24.0	2,389	3.0	26
WSB-TV D31 LD LIC	1.0	0	0.0	0
W31DH-D D31 LD LIC	1.0	0	0.0	0
WDKT-LD N31- TX LIC	13.0	1,427	7.0	326
WGHP D31 DT LIC	16.0	1,980	1.0	9
WKTC D31 DT LIC	45.9	807	10.0	0

Interference to BLANK0000093003 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	
Undesireds:	W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	230.9 km
	WAGT-CD	D30	DC	LIC	AUGUSTA, GA	BLANK0000063630	126.5
	WPCH-TV	D31	DT	LIC	ATLANTA, GA	BLANK0000081575	331.4
	WGHP	D31	DT	LIC	HIGH POINT, NC	BLANK0000116302	206.5
	WAXN-TV	D32	DT	LIC	KANNAPOLIS, NC	BLANK0000081193	127.3
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
27094.0		1,387,531		27016.0		1,387,245	25690.5
						1,356,588	25674.4
							1,356,538
							0.06
							0.00

Undesired		Total IX	Unique IX, before	Unique IX, after
W31DI-D D31 LD APP	42.2	148	16.1	50
WAGT-CD D30 DC LIC	459.8	5,474	374.6	4,995
WPCH-TV D31 DT LIC	35.9	423	4.0	38
WGHP D31 DT LIC	937.9	25,585	777.5	22,740
WAXN-TV D32 DT LIC	65.1	2,220	5.0	0

Interference to BLANK0000081641 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WBXX-TV	D31	DT	LIC	CROSSVILLE, TN	BLANK0000081641	
Undesireds:	W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	202.5 km
	WDGA-CD	D30	DC	LIC	DALTON, GA	BLANK0000098047	164.8
	WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000081030	191.8
	WCYB-TV	D30	DT	APP	BRISTOL, VA	BLANK0000127663	203.4
	WPCH-TV	D31	DT	LIC	ATLANTA, GA	BLANK0000081575	255.8

Table 1 W31DI-D TVStudy Analysis of Proposal
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WKMA-TV	D31	DT	LIC	MADISONVILLE, KY	BLANK0000087442	307.6
WGHP	D31	DT	LIC	HIGH POINT, NC	BLANK0000116302	405.9
WDTN	D31	DT	LIC	DAYTON, OH	BLANK0000126718	401.3
WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	393.2
WOAY-TV	D31	DT	LIC	OAK HILL, WV	BLANK0000096583	349.5
WKPT-TV	D32	DT	LIC	KINGSPORT, TN	BLANK0000070485	200.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
49818.8 2,142,237	44471.4 1,987,590	44019.2 1,975,309	44010.1 1,975,181	0.02 0.01

Undesired	Total IX	Unique IX, before	Unique IX, after
W31DI-D D31 LD APP	13.1 128	9.0 128	
WDGA-CD D30 DC LIC	72.9 1,942	56.0 1,298	56.0 1,298
WYFF D30 DT LIC	4.0 0	4.0 0	4.0 0
WCYB-TV D30 DT APP	65.6 2,130	57.6 2,127	57.6 2,127
WPCH-TV D31 DT LIC	244.5 5,762	214.4 4,508	214.4 4,508
WKMA-TV D31 DT LIC	48.4 2,038	35.2 1,428	35.2 1,428
WGHP D31 DT LIC	4.0 6	4.0 6	4.0 6
WDTN D31 DT LIC	30.9 1,397	29.9 1,351	29.9 1,351
WKTC D31 DT LIC	1.0 0	1.0 0	1.0 0
WOAY-TV D31 DT LIC	5.0 114	3.0 68	3.0 68
WKPT-TV D32 DT LIC	16.1 195	8.0 192	7.0 192

Interference to BLANK0000070485 LIC scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: WKPT-TV	D32	DT	LIC	KINGSPORT, TN	BLANK0000070485	
Undesireds: W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	61.4 km
WBXX-TV	D31	DT	LIC	CROSSVILLE, TN	BLANK0000081641	200.4
WDRB	D32	DT	LIC	LOUISVILLE, KY	BLANK0000087865	391.0
WAXN-TV	D32	DT	LIC	KANNAPOLIS, NC	BLANK0000081193	181.8
WOUB-TV	D32	DT	LIC	ATHENS, OH	BLANK0000068360	320.5
WNPX-TV	D32	DT	LIC	FRANKLIN, TN	BLANK0000087615	406.7
WKHA	D33	DT	LIC	HAZARD, KY	BLANK0000075043	126.1
WUNL-TV	D33	DT	LIC	WINSTON-SALEM, NC	BLANK0000121301	158.1

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
28681.5 1,131,458	21402.0 887,081	21140.2 881,473	21132.1 881,194	0.04 0.03

Undesired	Total IX	Unique IX, before	Unique IX, after
W31DI-D D31 LD APP	22.2 421	8.1 279	
WBXX-TV D31 DT LIC	3.0 79	3.0 79	3.0 79
WDRB D32 DT LIC	27.0 127	11.0 127	11.0 127
WAXN-TV D32 DT LIC	93.8 2,741	92.8 2,741	78.7 2,599
WOUB-TV D32 DT LIC	125.9 2,147	106.0 2,021	106.0 2,021
WNPX-TV D32 DT LIC	1.0 0	1.0 0	1.0 0
WKHA D33 DT LIC	46.0 640	23.0 514	23.0 514
WUNL-TV D33 DT LIC	1.0 0	0.0 0	0.0 0

Interference to proposal scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
Desired: W31DI-D	D31	LD	APP	SPRUCE PINE, NC	W31DI-D prop 4.8kW	
Undesireds: WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000081030	96.7 km
WCYB-TV	D30	DT	APP	BRISTOL, VA	BLANK0000127663	63.3
WPCH-TV	D31	DT	LIC	ATLANTA, GA	BLANK0000081575	307.6
WDKT-LD	N31-	TX	LIC	HENDERSONVILLE, NC	BLTTL19940525JJ	76.9
WGHP	D31	DT	LIC	HIGH POINT, NC	BLANK0000116302	204.1
W31DY-D	D31	LD	LIC	PICKENS, SC	BLANK0000119379	108.0
WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	230.9
WBXX-TV	D31	DT	LIC	CROSSVILLE, TN	BLANK0000081641	202.5

Service area	Terrain-limited	IX-free	Percent IX
7431.2 362,325	4461.8 149,046	4313.1 147,454	3.33 1.07

Undesired	Total IX	Unique IX	Prcnt Unique IX
WYFF D30 DT LIC	23.9 429	9.0 286	0.20 0.19
WCYB-TV D30 DT APP	9.1 24	4.0 0	0.09 0.00
WPCH-TV D31 DT LIC	2.0 0	0.0 0	0.00 0.00

Table 1 W31DI-D TVStudy Analysis of Proposal
(page 6 of 6)



WDKT-LD N31- TX LIC	23.9	363	6.0	90	0.13	0.06
WGHP D31 DT LIC	76.6	795	62.5	763	1.40	0.51
W31DY-D D31 LD LIC	20.9	397	5.0	34	0.11	0.02
WKTC D31 DT LIC	3.0	0	0.0	0	0.00	0.00
WBXX-TV D31 DT LIC	36.3	25	28.2	22	0.63	0.01

Channel and Facility Information

Section	Question	Response
Facility ID	69347	
State	North Carolina	
City	SPRUCE PINE	
LPT Channel	31	

Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	No
	ASR Number	
Coordinates (NAD83)	Latitude	35° 52' 47.4" N+
	Longitude	082° 06' 16.4" W-
	Structure Type	LTOWER-Lattice Tower
	Overall Structure Height	38 meters
	Support Structure Height	38 meters
	Ground Elevation (AMSL)	1271 meters
Antenna Data	Height of Radiation Center Above Ground Level	33 meters
	Height of Radiation Center Above Mean Sea Level	1304 meters
	Effective Radiated Power	4.8 kW

**Antenna
Technical Data**

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	Yes
	Antenna ID	81570
Antenna Manufacturer and Model	Manufacturer:	ERI
	Model	ALP8L8-HSPR-31
	Rotation	0 degrees
	Electrical Beam Tilt	2
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Horizontal
Elevation Radiation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	
	Out-of-Channel Emission Mask:	Full Service

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	Value	Degree	Value	Degree	Value	Degree	Value
0	0.87	90	0.15	180	0.9	270	1
10	0.72	100	0.145	190	0.98	280	1
20	0.57	110	0.146	200	1	290	1
30	0.36	120	0.156	210	1	300	1
40	0.21	130	0.21	220	1	310	1
50	0.149	140	0.32	230	1	320	1
60	0.149	150	0.5	240	1	330	1
70	0.175	160	0.66	250	1	340	1
80	0.202	170	0.8	260	1	350	0.96

Additional Azimuths

Degree	V _A
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