

TECHNICAL EXHIBIT  
APPLICATION FOR DTV AUXILIARY FACILITY CONSTRUCTION PERMIT  
IN SUPPORT OF ITS POST-TRANSITION FACILITY  
STATION WAXN-DT  
KANNAPOLIS, NORTH CAROLINA  
CH 50 13 KW (MAX-DA) 221 M

Technical Narrative

This Technical Exhibit supports an application for the WAXN-DT auxiliary (stand-by) facility application for digital television (DTV) station WAXN-DT for its final DTV at Kannapolis, North Carolina. This application requests a construction permit (CP) for a digital television auxiliary operation on channel 50 at Kannapolis with a non-directional effective radiated power of 13 kilowatts.

Proposed Facilities

Station WAXN-DT proposes to operate DTV auxiliary channel 50 from its DTV transmitter site. The antenna height above average terrain for the channel 50 DTV auxiliary operation is 221 meters.

The proposed DTV transmitter site will be located at its analog transmitter site. Therefore, the proposed site location is:

35° 15' 41" North Latitude  
80° 43' 38" West Longitude

A sketch of antenna and pertinent elevations are included as Figure 1.

Figure 2 is a map showing the DTV predicted coverage contours for both the herein proposed auxiliary and its Appendix B allotment. As can be seen, the proposed auxiliary noise-limited contour is entirely encompassed by its Appendix B facility. The extent of the contour has been calculated using the normal FCC prediction method. The Kannapolis city limits were derived from information contained in the 2000 U.S. Census of Population and Housing.

#### Population Served

The herein proposed WAXN-DT facility is predicted to serve 1,674,191 persons, post-transition based upon the 2000 Census. WAXN-DT's associated Appendix B facility is predicted to serve 1,894,000 persons. Therefore, the herein proposed WAXN-DT facility would serve 88.3% of WAXN-DT's Appendix B population.

#### Radiofrequency Electromagnetic Field Exposure

The proposed WAXN-DT facilities were evaluated in terms of potential radiofrequency electromagnetic field exposure at ground level to workers and the general public. The radiation center for the proposed WAXN-DT auxiliary antenna is located 177 meters above ground level. The maximum effective radiated power is 13 kilowatts. A "worst-case" relative field value of 0.25 is assumed for

the antenna's downward radiation. The calculated power density at a point 2 meters above ground level is less than 0.005 mW/cm<sup>2</sup>. This is less than 5 percent of the Commission's recommended limit of 0.46 mW/cm<sup>2</sup> for channel 50 for an "uncontrolled" environment.

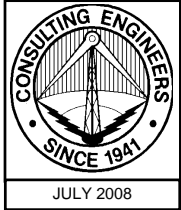
Access to the transmitting site will be restricted and appropriately marked with warning signs. As this is a multi-user site, an agreement will control access to the site. In the event that workers or other authorized personnel enter restricted areas or climb the tower, appropriate measures will be taken 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. The proposed WAXN-DT operation appears to be otherwise categorically excluded from environmental processing.

It is noted that this statement only addresses the potential for radiofrequency electromagnetic field exposure. All other aspects of the environmental processing analysis will be or already have been provided to the FCC by the tower owner.

Charles Cooper

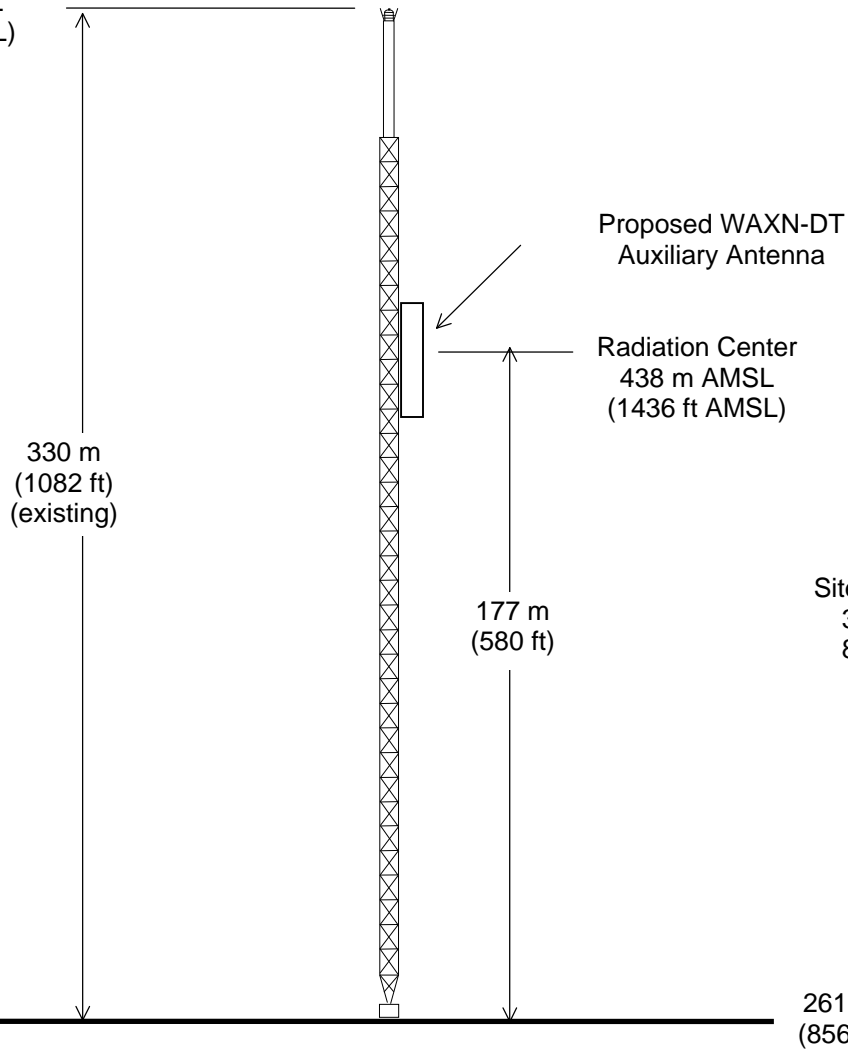
du Treil, Lundin & Rackley, Inc.  
201 Fletcher Avenue  
Sarasota, Florida 32437  
941.329.6000

July 22, 2008



ASRN: 1004745

591 m AMSL  
(1938 ft AMSL)



NAD27  
Site Coordinates:  
35° 15' 41" N  
80° 43' 38" W

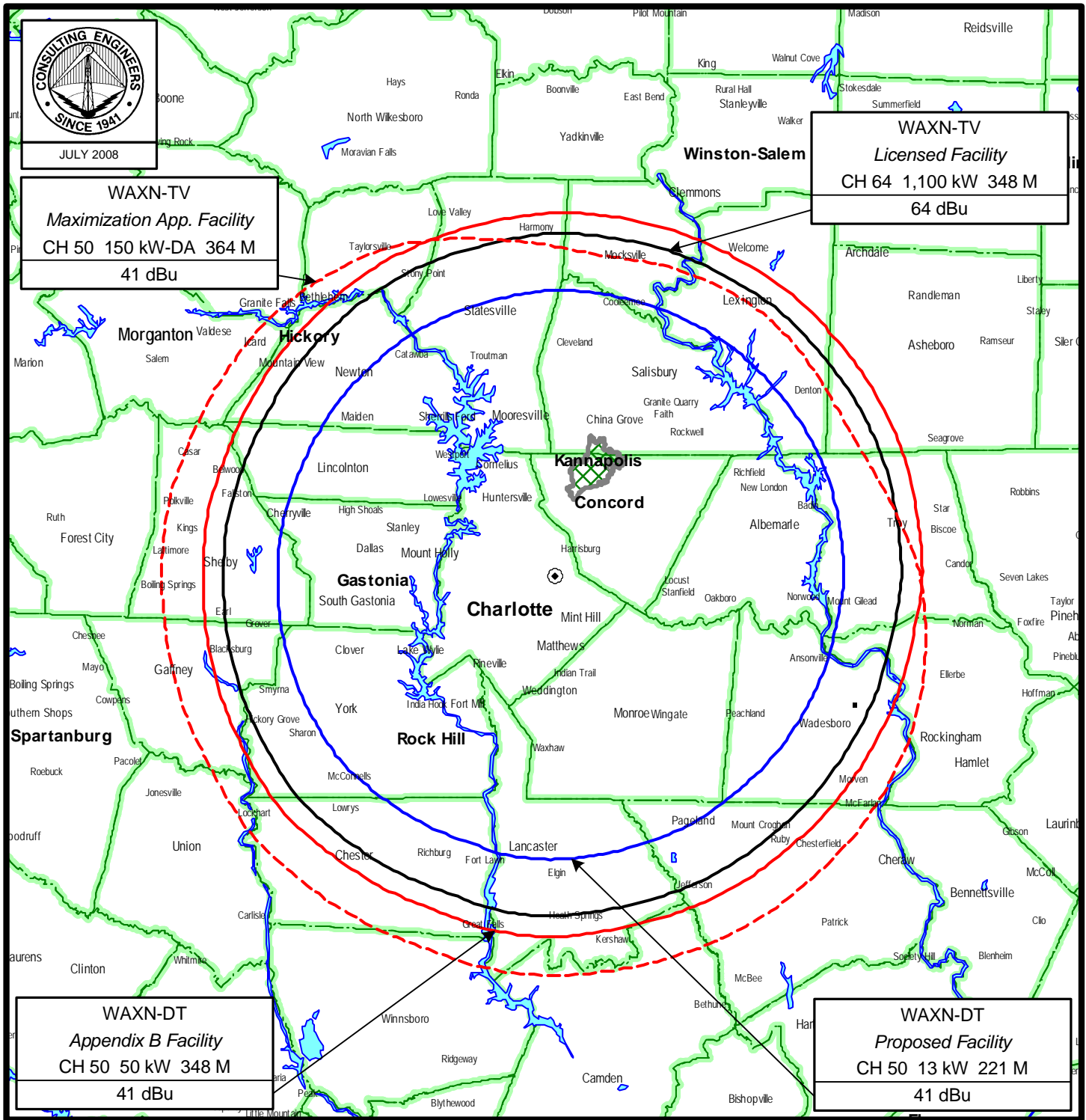
## ANTENNA AND SUPPORTING STRUCTURE

DTV STATION WAXN-DT – AUXILIARY FACILITY  
KANNAPOLIS, NORTH CAROLINA

CH 50 13 KW 221 M

du Treil, Lundin & Rackley, Inc. Sarasota, Florida

Figure 2



## PREDICTED COVERAGE CONTOURS

STATION WAXN-DT - AUXILIARY ANTENNA

KANNAPOLIS, NORTH CAROLINA

CH 50 13 KW 221 M

du Treil, Lundin & Rackley, Inc Sarasota, Florida

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 CH 50    13 KW    221 M

Post-Transition OET-69 Interference Analysis

TW Census data selected 2000  
 Post Transition Data Base Selected /export/home/cdbs/pt\_tvdb.sff

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 07-23-2008    Time: 09:25:28

Record Selected for Analysis

WAXN    USERRECORD-01    KANNAPOLIS    NC US  
 Channel 50 ERP 13.    kW    HAAT 234. m    RCAMSL 00438 m  
 Latitude 035-15-41    Longitude 0080-43-38  
 Status APP    Zone 2    Border  
 Last update    Cutoff date    Docket  
 Comments  
 Applicant

Cell Size for Service Analysis 2.0 km/side

Distance Increments for Longley-Rice Analysis 1.00 km

Facility meets maximum height/power limits

Azimuth (Deg)	ERP (kW)	HAAT (m)	41.0 dBu F(50,90) (km)
0.0	13.000	242.2	63.3
45.0	13.000	251.8	63.9
90.0	13.000	251.7	63.9
135.0	13.000	230.1	62.5
180.0	13.000	231.8	62.6
225.0	13.000	235.0	62.8
270.0	13.000	212.4	61.3
315.0	13.000	215.2	61.5

Evaluation toward Class A Stations

No Spacing violations or contour overlap to Class A stations

Class A Evaluation Complete

LANDMOBILE SPACING VIOLATIONS FOUND

NONE

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Figure 3

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

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#### Start of Interference Analysis

Channel	Call	Proposed Station City/State	ARN
50	WAXN	KANNAPOLIS NC	USERRECORD01

#### Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
46	WBFT-CA	SANFORD NC	142.3	LIC	BLTTL	-19890630IK
49	WBPI-CA	AUGUSTA GA	223.7	CP	BDFCDTA	-20060329AKI
49	WRAZ	RALEIGH NC	204.3	CP MOD	BMPCDT	-20040329AKW
49	WRAZ	RALEIGH NC	204.3	PLN	DTVPLN	-DTVP1745
49	WLFG	GRUNDY VA	212.5	CP	BPCDT	-19991029AGK
49	WLFG	GRUNDY VA	212.5	PLN	DTVPLN	-DTVP1754
50	WGS-CA	SAVANNAH GA	355.9	LIC	BLTTL	-19990413JD
50	WCBD-TV	CHARLESTON SC	274.9	CP MOD	BMPCDT	-20040419ABK
50	WCBD-TV	CHARLESTON SC	274.9	PLN	DTVPLN	-DTVP1778
50	WTLU-CA	LYNCHBURG VA	248.0	LIC	BLTTA	-20040812AAE
50	WGNT	PORTSMOUTH VA	420.2	LIC	BLCDDT	-20020718AAK
50	WGNT	PORTSMOUTH VA	420.2	PLN	DTVPLN	-DTVP1780
50	WGNT	PORTSMOUTH VA	420.2	APP	BPCDT	-20080616ABC
50	WOAY-TV	OAK HILL WV	302.0	APP	BPCDT	-20080619AID
50	WOAY-TV	OAK HILL WV	302.0	PLN	DTVPLN	-DTVP1784
50	WOAY-TV	OAK HILL WV	302.0	LIC	BLCDDT	-20070426AAK
51	WFXG	AUGUSTA GA	228.9	APP	BMPCDT	-20080620AJC
51	WFXG	AUGUSTA GA	228.9	PLN	DTVPLN	-DTVP1791
51	WFXG	AUGUSTA GA	228.9	CP MOD	BMPCDT	-20080219ATL
51	WFMY-TV	GREENSBORO NC	104.9	LIC	BLCDDT	-20050628AAB
51	WFMY-TV	GREENSBORO NC	104.9	PLN	DTVPLN	-DTVP1801

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#### Analysis of Interference to Affected Station 22

##### Analysis of current record

Channel	Call	City/State	Application Ref. No.
50	WAXN	KANNAPOLIS NC	USERRECORD-01

#### Stations Potentially Affecting This Station

Chan	Call	City/State	Dist(km)	Status	Application	Ref. No.
49	WRAZ	RALEIGH NC	204.3	CP MOD	BMPCDT	-20040329AKW
49	WRAZ	RALEIGH NC	204.3	PLN	DTVPLN	-DTVP1745
49	WLFG	GRUNDY VA	212.5	CP	BPCDT	-19991029AGK
49	WLFG	GRUNDY VA	212.5	PLN	DTVPLN	-DTVP1754
50	WCBD-TV	CHARLESTON SC	274.9	CP MOD	BMPCDT	-20040419ABK
50	WCBD-TV	CHARLESTON SC	274.9	PLN	DTVPLN	-DTVP1778
50	WGNT	PORTSMOUTH VA	420.2	LIC	BLCDDT	-20020718AAK
50	WGNT	PORTSMOUTH VA	420.2	PLN	DTVPLN	-DTVP1780
50	WGNT	PORTSMOUTH VA	420.2	APP	BPCDT	-20080616ABC
50	WOAY-TV	OAK HILL WV	302.0	APP	BPCDT	-20080619AID
50	WOAY-TV	OAK HILL WV	302.0	PLN	DTVPLN	-DTVP1784
50	WOAY-TV	OAK HILL WV	302.0	LIC	BLCDDT	-20070426AAK
51	WFXG	AUGUSTA GA	228.9	APP	BMPCDT	-20080620AJC
51	WFXG	AUGUSTA GA	228.9	PLN	DTVPLN	-DTVP1791
51	WFXG	AUGUSTA GA	228.9	CP MOD	BMPCDT	-20080219ATL
51	WFMY-TV	GREENSBORO NC	104.9	LIC	BLCDDT	-20050628AAB
51	WFMY-TV	GREENSBORO NC	104.9	PLN	DTVPLN	-DTVP1801

Total scenarios = 4

Result key: 89  
 Scenario 1 Affected station 22  
 Before Analysis

Results for: 50A NC KANNAPOLIS USERRECORD01 APP  
 HAAT 234.0 m, ATV ERP 13.0 kW



Figure 3

	POPULATION	AREA (sq km)
within Noise Limited Contour	1726511	11934.3
not affected by terrain losses	1721701	11830.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	47510	719.4
lost to ATV IX only	47510	719.4
lost to all IX	47510	719.4

Potential Interfering Stations Included in above Scenario 1

50A SC CHARLESTON	BMPCDT	20040419ABK	CP
51A NC GREENSBORO	BLCDT	20050628AAB	LIC

Result key: 90  
Scenario 2 Affected station 22  
Before Analysis

Results for: 50A NC KANNAPOLIS USERRECORD01 APP  
HAAT 234.0 m, ATV ERP 13.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1726511	11934.3
not affected by terrain losses	1721701	11830.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	47510	719.4
lost to ATV IX only	47510	719.4
lost to all IX	47510	719.4

Potential Interfering Stations Included in above Scenario 2

50A SC CHARLESTON	BMPCDT	20040419ABK	CP
51A NC GREENSBORO	DTVPLN	DTVP1801	PLN

Result key: 91  
Scenario 3 Affected station 22  
Before Analysis

Results for: 50A NC KANNAPOLIS USERRECORD01 APP  
HAAT 234.0 m, ATV ERP 13.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1726511	11934.3
not affected by terrain losses	1721701	11830.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	47510	719.4
lost to ATV IX only	47510	719.4
lost to all IX	47510	719.4

Potential Interfering Stations Included in above Scenario 3

50A SC CHARLESTON	DTVPLN	DTVP1778	PLN
51A NC GREENSBORO	BLCDT	20050628AAB	LIC

Result key: 92  
Scenario 4 Affected station 22  
Before Analysis

Results for: 50A NC KANNAPOLIS USERRECORD01 APP  
HAAT 234.0 m, ATV ERP 13.0 kW

	POPULATION	AREA (sq km)
within Noise Limited Contour	1726511	11934.3
not affected by terrain losses	1721701	11830.4
lost to NTSC IX	0	0.0
lost to additional IX by ATV	47510	719.4
lost to ATV IX only	47510	719.4
lost to all IX	47510	719.4

Potential Interfering Stations Included in above Scenario 4

50A SC CHARLESTON	DTVPLN	DTVP1778	PLN
51A NC GREENSBORO	DTVPLN	DTVP1801	PLN

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