

***APPLICATION FOR MODIFICATION OF
CONSTRUCTION PERMIT***

**W33DM – JACKSONVILLE, NORTH CAROLINA
FACILITY ID: 189742**

DIGITAL NETWORKS–SOUTHEAST, LLC

MARCH 2020

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3.21.2020

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APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Digital Networks-Southeast, LLC** ("Southeast"), licensee of low power television station W22CJ at Jacksonville, North Carolina, and permittee of low power digital companion channel W33DM also at Jacksonville, North Carolina, and are in support of their application for modification of construction permit.¹ This application seeks to modify the construction permit for W33DM under FCC File No. BDCCDTL-20110722AEM.

The current construction permit for W33DM at Jacksonville authorizes operation on channel 33 with a maximum effective radiated power of 15 kW at a center of radiation of 76.6 meters above mean sea level, 72 meters above ground, utilizing a directional antenna. The proposed facility would also operate on channel 33, but with a maximum effective radiated power of 5.02 kW utilizing a directional antenna. The proposed center of radiation elevation is 60.0 meters above mean sea level, or 47.8 meters above ground level. The antenna for the proposed facility is a Kathrein-Scala array comprised of four PR-TV antennas. Two of these antennas are oriented at 0 degrees true, while the other two are oriented at 180 degrees true.

The proposed technical parameters represent a minor change to the authorized facility. Exhibit E-1 illustrates that the proposed 51 dBu F(50,90) contour overlaps the authorized 51 dBu F(50,90) service contour. Additionally, this exhibit also demonstrates that the proposed 51 dBu service contour overlaps the licensed 74 dBu F(50,50) service contour. Finally, this exhibit also shows that the licensed and authorized site is located within 30 miles of the proposed site.

¹ The Facility ID for W22CJ at Jacksonville, North Carolina is 68008. The Facility ID for W33DM at Jacksonville, North Carolina is 189742.

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Exhibit E-2 is the output from *TVStudy* for the proposed facility. This study demonstrates that there are no outgoing IX check failures to any proposed or authorized facilities. This study was performed at the default values of cell size resolution at 1.0 km, and profile spacing increment also at 1.0 km.

The proposed facility would not constitute a significant environmental impact, and is exempt from environmental processing. The proposed antenna would be mounted to an existing tower that is registered with the Commission. The addition of the antenna to this tower would not increase the already existing environmental impact present from the tower.

In addition, the proposed facility would not result in human exposure at ground level to radiofrequency radiation in excess of the Commission's safety standards. Using the equations in Supplement A of *OET Bulletin 65*, the calculated worst-case power density at ground level assuming a downward radiation relative field of 0.3 is $7.19 \mu\text{W}/\text{cm}^2$. This value is substantially below the upper limit of the uncontrolled environment condition. Southeast certifies that it will coordinate with all users of the site to ensure that workers and other personnel are not exposed to levels of radiofrequency radiation in excess of the applicable safety standards. Coordination activities will include, but are not necessarily limited to, a reduction in transmitter power or cessation of operation.

The proposed facility complies with the provisions of Section 74.709 of the Commission's Rules. No land mobile protection issues have been identified based on the tables in that section of

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the rules, or on the output of *TVStudy*. The proposed facility also complies with Sections 74.793(e)-(h) of the Commission's Rules,

The preceding statement and attached exhibits have been prepared by me, or under my direction, and are true and accurate to the best of my belief and knowledge.



Above signature is digitized copy of actual signature
License Expires November 30, 2021

Jeremy D. Ruck, PE
March 21, 2020

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W33DM-D.X

PROPOSED
Latitude: 35-04-12.50 N
Longitude: 077-24-33.50 W
ERP: 5.02 kW
Channel: 33
AMSL Height: 60.0 m
Horiz. Pattern: Directional
Prop Model: FCC Contour

W33DM-D.C

BDCCDTL20110722AEM
Latitude: 34-44-56.59 N
Longitude: 077-24-49.87 W
ERP: 15.00 kW
Channel: 33
AMSL Height: 76.6 m
Horiz. Pattern: Directional
Prop Model: FCC Contour

W22CJ

BLTT19990629JD
Latitude: 34-44-56.59 N
Longitude: 077-24-49.87 W
ERP: 7.30 kW
Channel: 22-
AMSL Height: 77.0 m
Horiz. Pattern: Directional
Prop Model: FCC Contour

Exhibit E-1
Service Contour Comparison
W33DM - Greenville, North Carolina
Digital Networks-Southeast, LLC
March, 2020

Jeremy Ruck & Associates, Inc.

- Proposed 51 dBu F(50,90) Contour
- Authorized 51 dBu F(50,90) Contour
- Licensed 74 dBu F(50,50) Contour
- Proposed Site 30-mile Radius

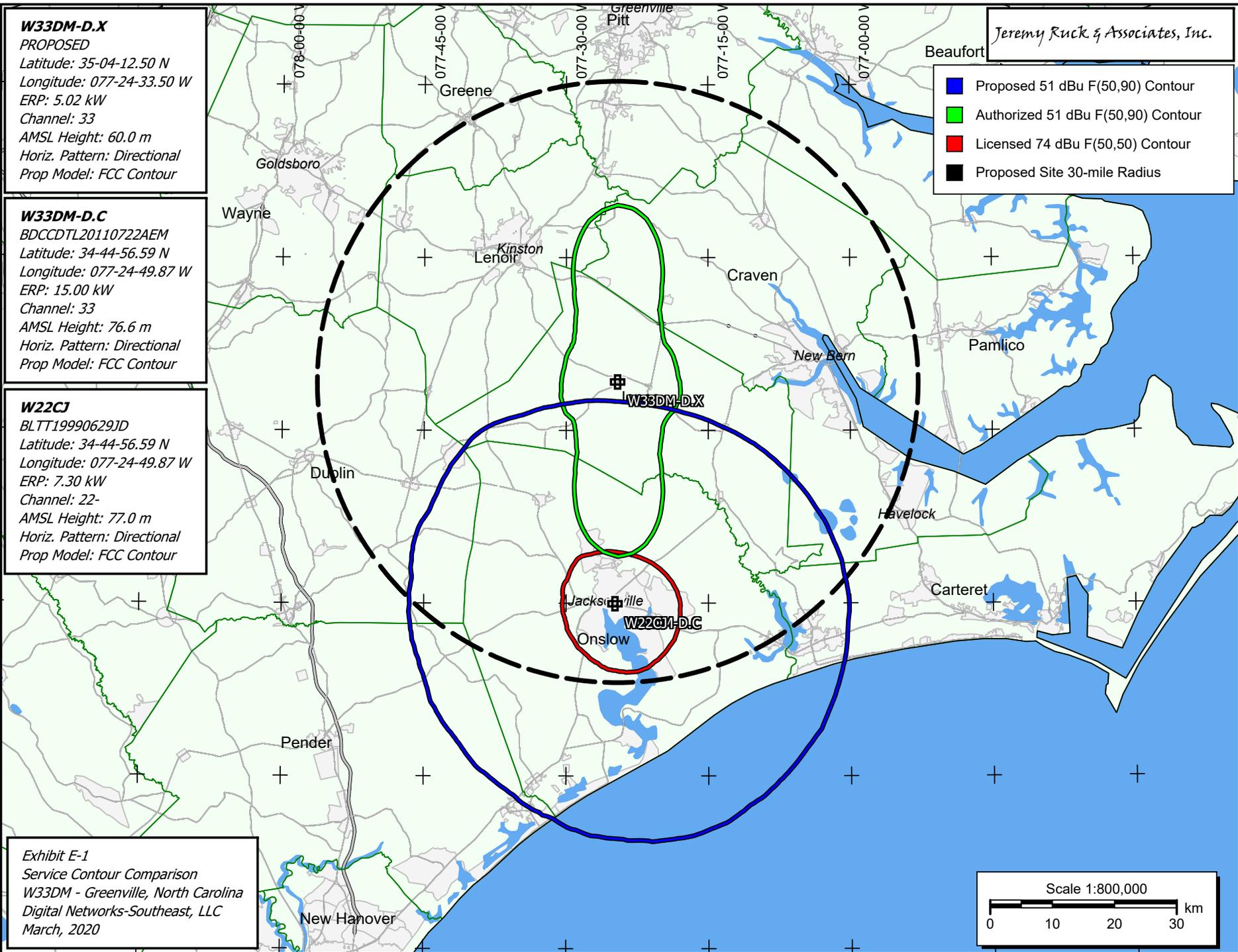


Exhibit E-2 - TVStudy Interference Study

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: W33DM Ch 33 ASRN 1255346 5.02 kW PR-TV x4 2@0 2@180 COR 60 m AGL, Model:

Longley-Rice

Start: 2020.03.21 16:12:36

Study created: 2020.03.21 16:12:36

Study build station data: LMS TV 2020-03-21

Proposal: W33DM-D D33 LD APP JACKSONVILLE, NC
File number: BDCCDTL20110722AEM
Facility ID: 189742
Station data: User record
Record ID: 119
Country: U.S.

Build options:

Protect pre-transition records not on baseline channel

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	W19CA	N19-	TX	LIC	LUMBERTON, NC	BLTT19961112JH	153.1 km
No	WDRN-LD	D32	LD	CP	FAYETTEVILLE, NC	BLANK0000035523	136.2
Yes	WTMQ-LD	D32	LD	CP	JACKSONVILLE, NC	BLANK0000029998	35.0
No	WRPX-TV	D32	DT	LIC	ROCKY MOUNT, NC	BLANK0000081831	107.7
No	WEJR-LD	D32	LD	CP	WILMINGTON, NC	BLANK0000071885	123.4
No	WMBF-TV	D32	DT	LIC	MYRTLE BEACH, SC	BLCDT20091105AAP	213.3
No	WPXV-TV	D32	DT	CP	NORFOLK, VA	BLANK0000068420	211.8
No	WHUT-TV	D33	DT	APP	WASHINGTON, DC	BLANK0000035679	432.3
No	WHUT-TV	D33	DT	LIC	WASHINGTON, DC	BLEDT20071018AIJ	432.3
No	WHUT-TV	D33	DT	CP	WASHINGTON, DC	BPEDT20120627AAD	432.3
No	WMYV	D33	DT	LIC	GREENSBORO, NC	BLCDT20020430ABD	235.8
No	WTNG-CD	D33	DC	LIC	LUMBERTON-PEMBROKE, NC	BLANK0000081109	160.3
No	W46EU-D	D33	LD	CP	RALEIGH, NC	BLANK0000054721	146.3
No	WILT-LD	D33	LD	LIC	WILMINGTON, NC	BLANK0000081348	119.7
No	WUNL-TV	D33	DT	CP	WINSTON-SALEM, NC	BLANK0000034443	304.1
No	WRLK-TV	D33	DT	CP	COLUMBIA, SC	BLANK0000086359	339.6
No	WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000081202	339.6
No	W33DN-D	D33	LD	CP	FLORENCE, SC	BLANK0000036212	229.6
No	WQHI-LD	D33	LD	CP	MYRTLE BEACH, SC	BNPDTL20100804AAD	201.8
No	W33AD	N33	TX	LIC	CONCORD, VA	BLTTL19821108IO	289.5
No	WTVZ-TV	D33	DT	LIC	NORFOLK, VA	BLCDT20090602ABA	209.8
Yes	WPXU-TV	D34	DT	LIC	JACKSONVILLE, NC	BLCDT20021029AAD	61.3
No	WPEM-LD	D34	LD	CP	LUMBERTON, NC	BLANK0000030452	155.0
No	WACN-LP	D34z	LD	CP	RALEIGH, NC	BLANK0000050869	162.4
No	WACN-LP	N34z	TX	LIC	RALEIGH, NC	BLTTL20060609AAA	121.6
No	WITN-TV	D34	DT	LIC	WASHINGTON, NC	BLANK0000091433	32.9
No	WIDO-LD	D34	LD	CP	WILMINGTON, NC	BLANK0000071898	110.3
No	WJHJ-LP	D34+	LD	CP	NEWPORT NEWS, ETC., VA	BLANK0000054621	220.6

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D33
Mask: Stringent
Latitude: 35 4 12.50 N (NAD83)
Longitude: 77 24 33.50 W
Height AMSL: 60.0 m
HAAT: 45.3 m
Peak ERP: 5.02 kW
Antenna: SCA PR-TV x4 2@0 2@180 0.0 deg
Elev Pattn: None

50.6 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	5.02 kW	45.3 m	28.9 km

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Exhibit E-2 - TVStudy Interference Study

45.0	0.057	46.7	10.5
90.0	0.042	51.0	10.2
135.0	0.057	46.5	10.4
180.0	5.02	43.9	28.5
225.0	0.057	43.0	10.0
270.0	0.042	42.4	9.3
315.0	0.057	43.6	10.1

Distance to Canadian border: 846.2 km

Distance to Mexican border: 2118.8 km

Conditions at FCC monitoring station: Laurel MD
 Bearing: 6.4 degrees Distance: 458.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
 Bearing: 291.2 degrees Distance: 2502.2 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 BLANK0000029998 CP scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WTMQ-LD	D32	LD	CP	JACKSONVILLE, NC	BLANK0000029998	
Undesireds:	W33DM-D	D33	LD	APP	JACKSONVILLE, NC	BDCCDTL20110722AEM	35.0 km
	WRPX-TV	D32	DT	LIC	ROCKY MOUNT, NC	BLANK0000081831	130.9
	WEJR-LD	D32	LD	CP	WILMINGTON, NC	BLANK0000071885	89.7
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
	6104.6	242,812	6104.6	242,812	5610.8	232,926	5590.9 232,809 0.36 0.05
Undesired			Total IX		Unique IX, before	Unique IX, after	
W33DM-D	D33	LD	APP	52.9	250	20.0	117
WRPX-TV	D32	DT	LIC	436.4	7,738	403.5	7,605
WEJR-LD	D32	LD	CP	57.4	2,148	57.4	2,148

 Interference to BLCDT20021029AAD LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WPXU-TV	D34	DT	LIC	JACKSONVILLE, NC	BLCDT20021029AAD	
Undesireds:	W33DM-D	D33	LD	APP	JACKSONVILLE, NC	BDCCDTL20110722AEM	61.3 km
	WITN-TV	D34	DT	LIC	WASHINGTON, NC	BLANK0000091433	94.1
	WGWG	D34	DT	LIC	CHARLESTON, SC	BLCDT20060630ADJ	273.4
	Service area		Terrain-limited		IX-free, before	IX-free, after	Percent New IX
	18466.5	691,857	18466.5	691,857	9184.9	361,307	9184.9 361,307 0.00 0.00
Undesired			Total IX		Unique IX, before	Unique IX, after	
W33DM-D	D33	LD	APP	141.7	1,119	0.0	0
WITN-TV	D34	DT	LIC	9281.5	330,550	9134.9	329,349
WGWG	D34	DT	LIC	5.0	82	0.0	0

 Interference to proposal scenario 1
 21.58% interference received

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	W33DM-D	D33	LD	APP	JACKSONVILLE, NC	BDCCDTL20110722AEM	

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Undesireds: WITN-TV D34 DT LIC WASHINGTON, NC BLANK0000091433 32.9 km

Service area	Terrain-limited	IX-free	Percent IX
807.9 6,873	807.9 6,873	688.8 5,390	14.74 21.58

Undesired	Total IX	Unique IX	Prct Unique IX
WITN-TV D34 DT LIC	119.1 1,483	119.1 1,483	14.74 21.58

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