

***APPLICATION FOR MODIFICATION
OF CONSTRUCTION PERMIT - DISPLACEMENT***

**W49EE-D – CHARLESTON, SOUTH CAROLINA
FACILITY ID: 190344**

DIGITAL NETWORKS–SOUTHEAST, LLC

DECEMBER 2019

APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT - DISPLACEMENT

The following engineering statement and attached exhibits have been prepared for **Digital Networks-Southeast, LLC** ("Southeast"), permittee of digital low-power companion facility W49EE-D at Beaufort, South Carolina, and are in support of their application to modify that construction permit via displacement. The FCC File No. for the current W49EE construction permit is BDDCDTL-20120404ABU.

The current construction permit authorizes operation on channel 49 with a maximum effective radiated power of 12 kW at a center of radiation of 53 meters above mean sea level utilizing a composite directional antenna. The proposed facility would operate on television channel 30 with a maximum effective radiated power of 11.6 kW at a center of radiation of 53 meters above mean sea level, 51.5 meters above ground level also utilizing a directional antenna. This application proposes no change to the directional antenna authorized under the current construction permit, which is a Kathrein-Scala PR-TV array consisting of four elements with equal power division. Additionally, this application proposes no change to the authorized site location, but proposes a change in the community of license to Charleston, South Carolina.

Exhibit E-1 illustrates the comparison between the proposed and authorized 51 dBu F(50,90) contours, and also includes the licensed 74 dBu F(50,50) contour for associated analog LPTV facility. This map demonstrates that the proposed 51 dBu F(50,90) contour is essentially congruent to the authorized contour, and overlaps with the licensed analog facility contour. Additionally, this map also demonstrates that the proposed site, which is also the authorized site, is located within 30 miles of the licensed site.

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

12.11.2019

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 a cell size resolution of 1.0 km, and a profile spacing increment of 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 0.2 is $6.32 \mu\text{W}/\text{cm}^2$. This value is substantially below the upper limit of the uncontrolled environment condition. Southeast certifies it will coordinate with all other 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.

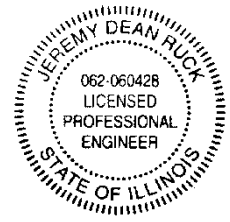
The proposed facility complies with the provisions of Section 74.709 of the Commission's Rules. No land mobile protection issues have been identified based on the tables in that section of the rules, or on the output of *TVStudy*. The proposed facility also complies with Sections 74.793(e)-(h) and 74.793(h) of the Commission's Rules,

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

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, 2019

Jeremy D. Ruck, PE
December 11, 2019

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

12.11.2019

W49EE-D.X

PROPOSED

Latitude: 32-33-21.20 N

Longitude: 080-17-07.90 W

ERP: 11.60 kW

Channel: 30

Frequency: 569.0 MHz

AMSL Height: 53.0 m

Horiz. Pattern: Directional

Prop Model: None

W49EE-D.C

BDCCDTL-20120404ABU

Latitude: 32-33-21.20 N

Longitude: 080-17-07.90 W

ERP: 12.00 kW

Channel: 49

Frequency: 683.0 MHz

AMSL Height: 53.0 m

Horiz. Pattern: Directional

Prop Model: None

WLOW-LP

BLTT-20000302AAU

Latitude: 32-24-03.10 N

Longitude: 080-44-21.40 W

ERP: 4.00 kW

Channel: 19-

Frequency: 502.5 MHz

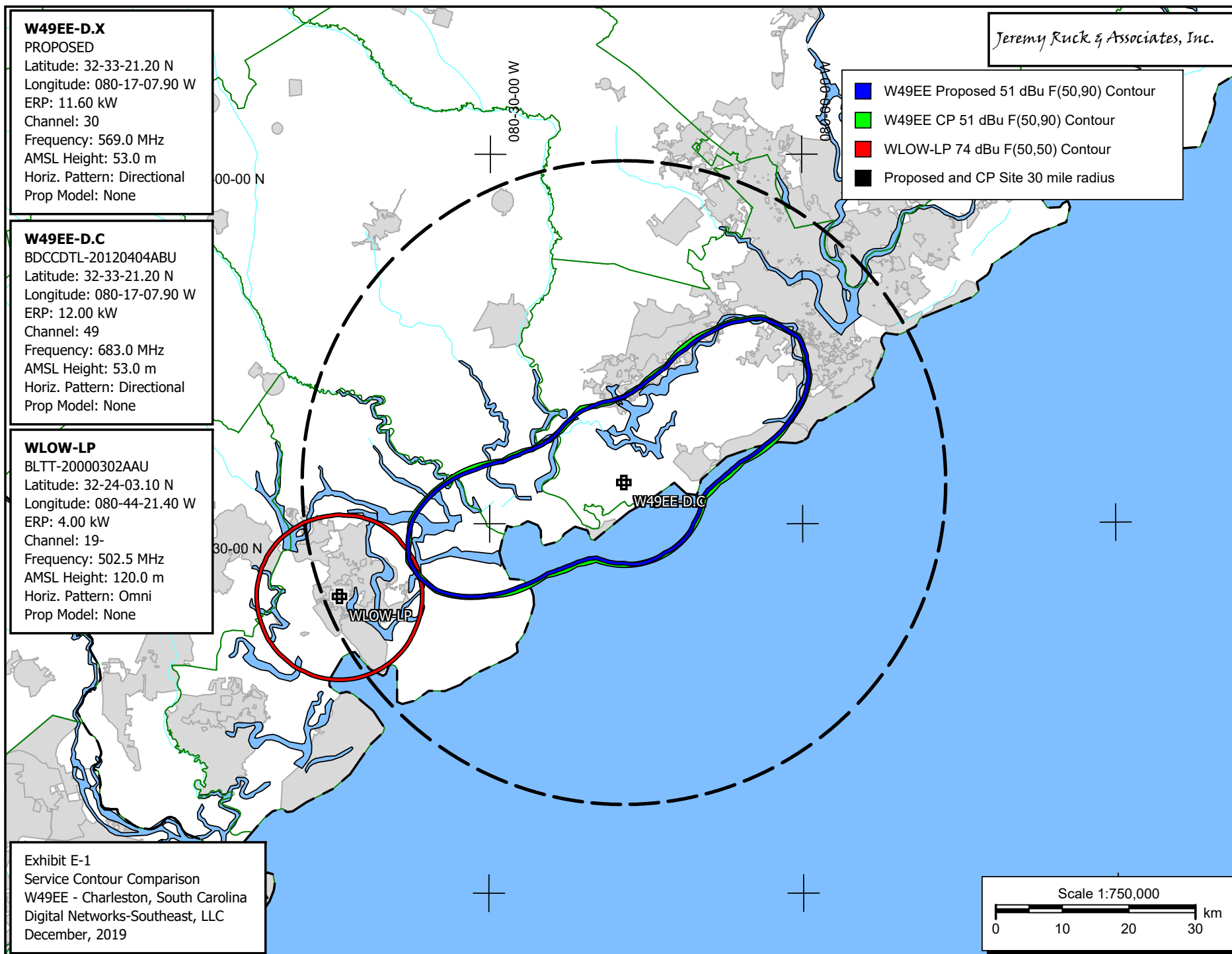
AMSL Height: 120.0 m

Horiz. Pattern: Omni

Prop Model: None

Jeremy Ruck & Associates, Inc.

- W49EE Proposed 51 dBu F(50,90) Contour
- W49EE CP 51 dBu F(50,90) Contour
- WLOW-LP 74 dBu F(50,50) Contour
- Proposed and CP Site 30 mile radius

**Exhibit E-1**

Service Contour Comparison

W49EE - Charleston, South Carolina

Digital Networks-Southeast, LLC

December, 2019

Scale 1:750,000

0 10 20 30 km

Exhibit E-2 - TVStudy Interference Study

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: W49EE Displacement to Channel 30, Model: Longley-Rice
Start: 2019.12.11 15:52:16

Study created: 2019.12.11 15:52:16

Study build station data: LMS TV 2019-12-10

Proposal: W49EE-D D30 LD APP BEAUFORT, SC
File number: BDCCDTL20120404ABU
Facility ID: 190344
Station data: User record
Record ID: 283
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	WSFX-TV	D29	DT	CP	WILMINGTON, NC	BLANK0000034230	261.9 km
No	WUNJ-TV	D29	DT	LIC	WILMINGTON, NC	BLDT20080821AAH	273.7
No	W29EC-D	D29	LD	CP	FLORENCE, SC	BNPDTL20100409ABX	159.3
No	WAZS-LD	D29	LD	LIC	NORTH CHARLESTON, SC	BLDTL20100916ADH	44.8
No	WRJA-TV	D29	DT	LIC	SUMTER, SC	BLANK0000081209	147.3
No	WLGA	D30	DT	LIC	OPELIKA, AL	BLCDT20140827ABE	423.4
No	WEFS	D30	DT	LIC	COCOA, FL	BLDT20130801ABM	444.8
No	W30EE-D	D30	LD	LIC	JACKSONVILLE, FL	BLANK0000090922	280.0
No	W30EM-D	D30	LD	CP	OCALA, FL	BLANK0000071927	406.8
No	WBUD-LD	D30	LD	CP	Atlanta, GA	BLANK0000071622	401.9
No	WTBS-LD	D30	LD	LIC	ATLANTA, GA	BLDTL20110105ABR	401.9
No	WAGT-CD	D30	DC	LIC	AUGUSTA, GA	BLANK0000063630	172.5
No	WMGT-TV	D30	DT	LIC	MACON, GA	BLANK0000075816	307.5
No	W30DW-D	D30	LD	LIC	TIFTON, GA	BLDTT20141124ARP	331.0
No	WVCZ-LD	D30	LD	LIC	VALDOSTA, GA	BLANK0000001216	352.8
No	WVCZ-LD	D30	LD	CP	VALDOSTA, GA	BLANK0000001343	349.6
No	W30CR-D	D30	LD	LIC	BISCOE, NC	BLDTT20101029AAJ	305.3
No	WSOC-TV	D30	LD	LIC	CHARLOTTE, NC	BLCDT20100119ACN	311.2
No	WAXN-TV	D30	LD	CP	KANNAPOLIS, NC	BLANK0000054241	339.0
No	WUNU	D30	DT	CP	LUMBERTON, NC	BLANK0000034418	274.3
No	WSFX-TV	D30	DT	LIC	WILMINGTON, NC	BLCDT20110209AAO	261.9
No	W30DH-D	D30	LD	CP	FLORENCE, SC	BNPDTL20100409ABY	159.3
No	WYFF	D30	DT	LIC	GREENVILLE, SC	BLANK0000081030	355.8
No	W30CV-D	D30	DC	LIC	HILTON HEAD ISLAND, SC	BLDTL20110110AAR	63.2
No	WUNU	D31	DT	LIC	LUMBERTON, NC	BLDT20091113ABG	274.3
No	W26DT-D	D31	LD	CP	MYRTLE BEACH, SC	BLANK0000087112	162.8
No	WJNI-LD	D31	LD	LIC	NORTH CHARLESTON, SC	BLDTL20100916ADG	44.8
No	WKTC	D31	DT	LIC	SUMTER, SC	BLANK0000093003	179.0
No	WKTC	D31	DT	CP	SUMTER, SC	BLANK0000027544	179.0
No	WSCG-LD	N32+	TX	LIC	BEAUFORT, ETC., SC	BLTT19970401JB	45.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D30
Mask: Full Service
Latitude: 32 33 21.20 N (NAD83)
Longitude: 80 17 7.90 W
Height AMSL: 53.0 m
HAAT: 52.1 m
Peak ERP: 11.6 kW
Antenna: PR-TV(4) Array 2@0 2@160 250.0 deg
Elev Pattern: Generic

50.3 dBu contour:

Azimuth ERP HAAT Distance

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

12.11.2019

Exhibit E-2 - TVStudy Interference Study

0.0 deg	0.121 kW	51.4 m	13.4 km
45.0	10.4	50.4	34.0
90.0	0.153	52.8	14.4
135.0	0.098	53.0	12.9
180.0	0.088	52.8	12.5
225.0	0.955	52.7	23.0
270.0	2.40	52.2	27.4
315.0	0.105	51.8	12.9

Distance to Canadian border: 1030.8 km

Distance to Mexican border: 1768.6 km

Conditions at FCC monitoring station: Powder Springs GA
Bearing: 290.6 degrees Distance: 437.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 297.8 degrees Distance: 2376.1 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 proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	W49EE-D	D30	LD	APP	BEAUFORT, SC	BDCCDTL20120404ABU	

	Service area		Terrain-limited		IX-free		Percent IX
1307.4	33,152	1307.4	33,152	1307.4	33,152	0.00	0.00

JEREMY RUCK & ASSOCIATES, INC.

P.O. Box 415
221 S. 1st Avenue
Canton, IL 61520

Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

12.11.2019