

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

**W27EM – BURLINGTON, VERMONT
FACILITY ID: 67941**

DIGITAL NETWORKS—NORTHEAST, LLC

JULY 2020

APPLICATION FOR MODIFICATION OF CONSTRUCTION PERMIT

The following engineering statement and attached exhibits have been prepared for **Digital Networks-Northeast, LLC** ("Northeast"), licensee of low power television station W16AL at Burlington, Vermont, and permittee of its digital displacement facility W27EM also at Burlington, Vermont, and are in support of their application for modification of construction permit.¹ This application proposes a relocation of the existing construction permit for the digital facility, which is under LMS File No. 0000054673.

The existing construction permit for W27EM authorizes operation on channel 27 with a maximum effective radiated power of 15 kW at a center of radiation of 625 meters above mean sea level, 8 meters above ground level, utilizing a directional antenna. The proposed facility would operate on television channel 27 with a maximum effective radiated power of 15 kW at a center of radiation of 293 meters above mean sea level, 55.3 meters above ground level, utilizing a Propagation Systems, Inc. ("PSI") model PSILP8EC antenna.

The proposed technical parameters represent a minor change to both the licensed W16AL analog facilities, and the authorized W27EM facilities. Exhibit E-1 illustrates the proposed 51 dBu F(50,90) dBu contour overlaps both the authorized 51 dBu F(50,90) contour and the licensed 74 dBu F(50,50) contour. Additionally, the proposed transmitter site is located within 30 miles of both the licensed and authorized transmitter sites.

Exhibit E-2 is the study output from *TVStudy* for the proposed facility. This study demonstrates that there are no outgoing interference check failures to any proposed or authorized

¹ The Facility ID for W27EM/W16AL at Burlington, Vermont is 67941.

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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 array would be mounted to an existing tower that is registered with the Commission. The addition of the antenna system to this tower would not increase the already existing environmental impact present from the structure.

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 $15.9 \mu\text{W}/\text{cm}^2$. This value is substantially less than the upper limit of the uncontrolled environment condition.

Northeast 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.

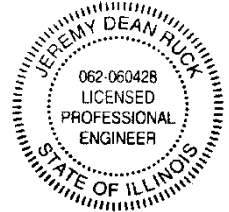
The proposed facility complies with the provisions of Section 74.709 of the Commission's Rules. No land mobile protection issues have been identified based on the tables in that section of the rules, or on the output of *TVStudy*. The proposed facility also complies with Sections 74.793(e)-(h) of the Commission's Rules. Northeast notes that the proposed facility is in proximity to the border with Canada, potentially requiring coordination.

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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
July 26, 2020

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7.26.2020

W16AL

BLTT-19940720IH
Latitude: 44-21-52.10 N
Longitude: 072-55-51.40 W
ERP: 43.20 kW
Channel: 16+
Frequency: 485.5 MHz
AMSL Height: 633.0 m
Horiz. Pattern: Directional
Prop Model: FCC Contour

W27EM-D/W16AL.C

0000054673
Latitude: 44-21-52.10 N
Longitude: 072-55-51.40 W
ERP: 15.00 kW
Channel: 27
Frequency: 551.0 MHz
AMSL Height: 633.0 m
Horiz. Pattern: Directional
Prop Model: FCC Contour

W27EM.X

0000054673
Latitude: 44-32-20 N
Longitude: 073-05-34 W
ERP: 15.00 kW
Channel: 27
Frequency: 551.0 MHz
AMSL Height: 293.0 m
Horiz. Pattern: Directional
Prop Model: FCC Contour

Exhibit E-1

Service Contour Comparison
W27EM/W16AL - Burlington, Vermont
Digital Networks-Northeast, LLC
July, 2020

Jeremy Ruck & Associates, Inc.

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

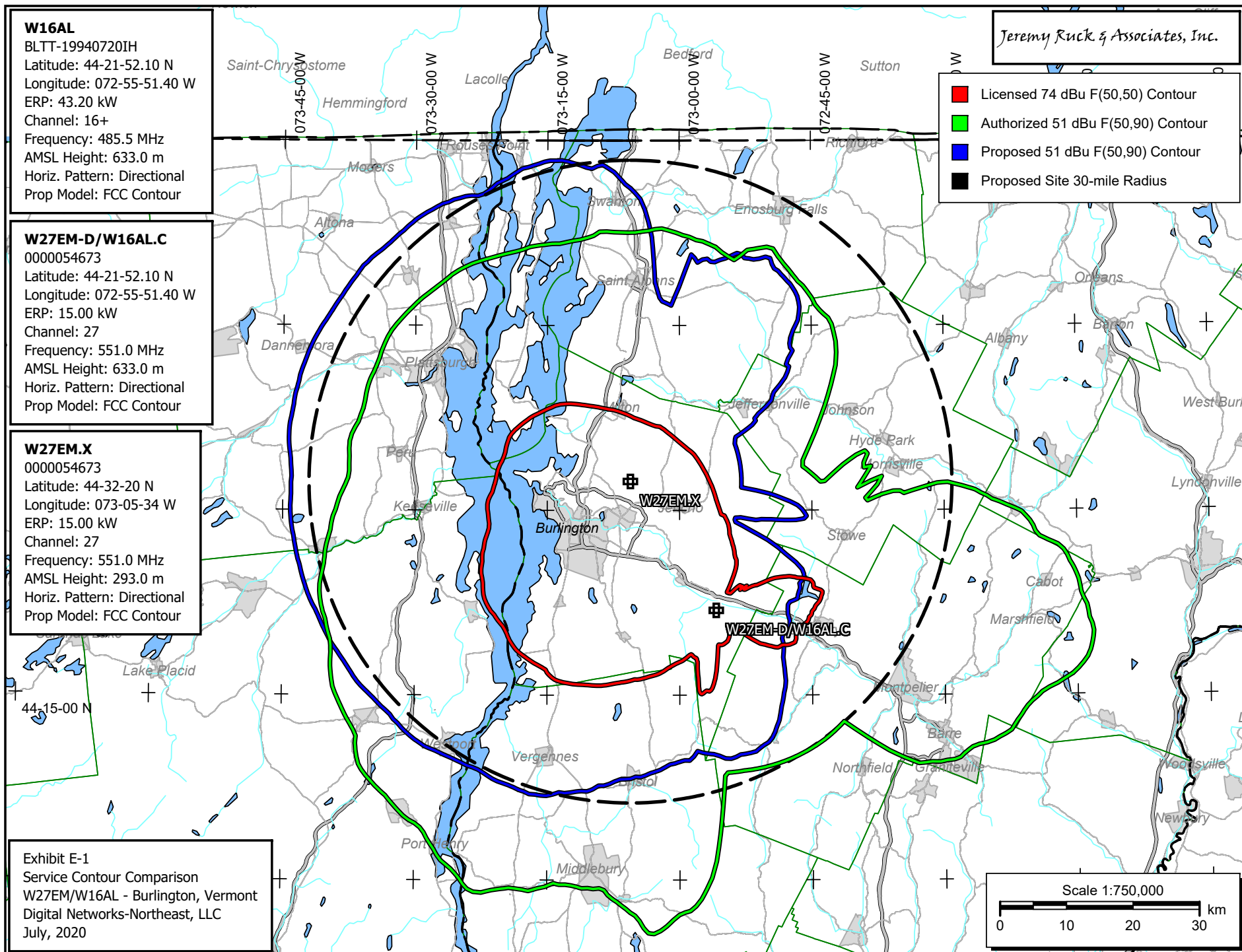


Exhibit E-2 - TVStudy Interference Study

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: W27EM CH 27 ASRN 1057823 15 kW ERP 293 m AMSL PSILP8EC, Model: Longley-Rice
Start: 2020.07.26 14:07:35

Study created: 2020.07.26 14:07:35

Study build station data: LMS TV 2020-07-26

Proposal: W16AL D27 LD CP BURLINGTON, VT
File number: BLANK0000054673
Facility ID: 67941
Station data: User record
Record ID: 169
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	WGGB-TV	D26	DT	LIC	SPRINGFIELD, MA	BLANK0000083684	257.8 km
No	WYCU-LD	D26	LD	LIC	CHARLESTOWN, ETC., NH	BLDTL20121214ABJ	142.1
No	WYBN-LD	D26	LD	CP	COBLESKILL, NY	BLANK0000082460	224.9
No	W26EP-D	D26	LD	CP	POTSDAM, NY	BNPDTL20090825BCA	152.9
No	WPBS-TV	D26	DT	LIC	WATERTOWN, NY	BLANK0000081158	223.0
No	WUNI	D27	DT	LIC	MARLBOROUGH, MA	BLANK0000030092	272.0
No	WUNI	D27	DT	CP	MARLBOROUGH, MA	BLANK0000035720	291.0
No	W27BL	N27+	TX	LIC	BERLIN, NH	BLTTL19950530IQ	153.0
No	WNYT	D27	LD	CP	ALBANY, NY	BLANK0000053981	199.5
No	WIVT	D27	DT	LIC	BINGHAMTON, NY	BLANK0000090477	359.2
No	WIXT-CD	D27	DC	CP	DEWITT, NY	BLANK0000100177	296.4
No	WNYW	D27	DT	LIC	NEW YORK, NY	BLANK0000079881	431.8
No	WYJH-LD	D27	LD	LIC	WHITE LAKE, NY	BLANK0000112742	333.3
No	WOLF-TV	D27	LD	CP	HAZLETON, PA	BLANK0000054833	374.5
No	WNYT	D28	LD	CP	ALBANY, NY	BLANK0000053982	147.0
No	WWDG-CD	D28	DC	LIC	UTICA, NY	BLANK0000001609	227.9
No	WWDG-CD	D28	DC	CP	UTICA, NY	BLANK0000035669	228.0
Yes	WVTB	D28	DT	LIC	ST. JOHNSBURY, VT	BLANK0000098226	95.1
No	W28DQ-D	D28	LD	LIC	WINDSOR, VT	BLDTL20120507ABK	132.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D27
Mask: Full Service
Latitude: 44 32 20.00 N (NAD83)
Longitude: 73 5 34.00 W
Height AMSL: 293.0 m
HAAT: 143.8 m
Peak ERP: 15.0 kW
Antenna: PSILP8EC 270.0 deg
Elev Pattern: Generic
Elec Tilt: 1.00

50.0 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	12.7 kW	122.3 m	45.1 km
45.0	2.84	112.2	36.8
90.0	1.01	22.3	17.9
135.0	2.84	83.4	33.5
180.0	12.7	131.8	45.7
225.0	14.1	216.5	51.5
270.0	13.0	233.8	52.1
315.0	14.1	224.8	52.0

Database HAAT does not agree with computed HAAT

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Exhibit E-2 - TVStudy Interference Study

Database HAAT: 144 m Computed HAAT: 143 m

**Proposal 25.05 dBu contour crosses Canadian border, coordination required
Distance to Canadian border: 53.0 km

Distance to Mexican border: 2968.2 km

Conditions at FCC monitoring station: Belfast ME
Bearing: 90.5 degrees Distance: 318.1 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 270.8 degrees Distance: 2666.4 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 BLANK0000098226 LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WVTB	D28	DT	LIC	ST. JOHNSBURY, VT	BLANK0000098226	
Undesireds:	W16AL	D27	LD	CP	BURLINGTON, VT	BLANK0000054673	95.1 km
	WHPX-TV	D28	DT	LIC	NEW LONDON, CT	BLANK0000080171	327.6
	WWDG-CD	D28	DC	LIC	UTICA, NY	BLANK0000001609	307.2
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
25390.2	458,123	18361.7	246,827	18268.7	245,139	18259.7	0.05 0.05
5175.6	279,857	3653.6	189,458	3653.6	189,458	3653.6	0.00 0.00 (in
Canada)							
Undesired				Total IX	Unique IX, before	Unique IX, after	
W16AL D27 LD CP				9.0	126	9.0	126
WHPX-TV D28 DT LIC				93.0	1,688	93.0	1,688

----- Interference to proposal scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	W16AL	D27	LD	CP	BURLINGTON, VT	BLANK0000054673	
Undesireds:	WUNI	D27	DT	LIC	MARLBOROUGH, MA	BLANK0000030092	272.0 km
	WNYT	D27	LD	CP	ALBANY, NY	BLANK0000053981	199.5
Service area		Terrain-limited		IX-free		Percent IX	
5902.0	281,430	5119.4	261,511	5115.4	261,493	0.08	0.01
Undesired				Total IX	Unique IX	Prct Unique IX	
WNYT D27 LD CP				4.0	18	4.0	18 0.08 0.01

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