

***COMPREHENSIVE TECHNICAL EXHIBIT
APPLICATION FOR CONSTRUCTION PERMIT***

**W47CM - GLENS FALLS, NEW YORK
FACILITY ID: 68052**

DIGITAL NETWORKS—NORTHEAST, LLC

MAY 2018

© 2018 JEREMY RUCK & ASSOCIATES, INC.

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

5.21.2018

APPLICATION FOR CONSTRUCTION PERMIT - DISPLACEMENT

The following engineering statement and attached exhibits have been prepared for **Digital Networks-Northeast, LLC** ("Northeast"), licensee of translator station W47CM at Glens Falls, New York, and are in support of their application for construction permit.¹ This application is being filed as a displacement application due to realignment of the television band resulting from the Commission's *Incentive Auction*. W47CM qualifies to file in this window, as it is being displaced from its operation on channel 47, and was operational with the licensed technical parameters prior to April 13, 2017.²

W47CM is currently licensed to operate on channel 47 as an analog translator facility. The licensed effective radiated power is 20.2 kW at a center of radiation of 465 meters above mean sea level utilizing a non-directional antenna. The proposed facility would operate as a digital translator station on channel 32 with a maximum effective radiated power of 1.42 kW at a center of radiation of 465 meters above mean sea level utilizing a directional antenna. The proposed directional antenna is comprised of a single Kathrein-Scala PR-TV-32 "paraflector" antenna oriented at 140 degrees true.

Exhibit E-1 provides the output from *TVStudy* for the proposed facility. This study demonstrates no outgoing interference check failures for the proposed facility.

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

¹ The Facility ID for W47CM at Glens Falls, New York is 68052.

² See FCC File No. BLTT-20011009ABI.

JEREMY RUCK & ASSOCIATES, INC.

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

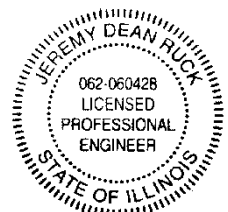
Tel: 309.647.1200
Fax: 855.332.9537
jeremyruck.com

that is registered with the Commission. The addition of the antenna to this tower would not increase the existing environmental impact already present from the tower.

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 $1.19 \mu\text{W}/\text{cm}^2$. This value is 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) and 74.793(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, 2019

Jeremy D. Ruck, PE
May 21, 2018

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

5.21.2018

Exhibit E-1 - TVStudy Interference Study

tvstudy v2.2.5 (4uoc83)

Database: 127.0.0.1, Study: W47CM Channel 32 PR-TV-32 at 140 Deg True 1.42 kW Max ERP Canada Considered,
Model: Longley-Rice
Start: 2018.05.21 12:16:25

Study created: 2018.05.21 12:16:25

Study build station data: LMS TV 2018-05-19

Proposal: W47CM D32 LD CP GLENS FALLS, NY
File number: BLANK0000022023
Facility ID: 68052
Station data: User record
Record ID: 80
Country: U.S.

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

Search options:
Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WTIC-TV	D31	DT	LIC	HARTFORD, CT	BLCDT20101222AAE	157.0 km
No	WVIT	D31	DT	CP	NEW BRITAIN, CT	BLANK0000034341	157.3
No	WFXT	D31	DT	LIC	BOSTON, MA	BLCDT20090422ABH	204.6
No	WCSH	D31	DT	CP	PORTLAND, ME	BLANK0000034813	245.4
No	WSKG-TV	D31	DT	CP	BINGHAMTON, NY	BLANK0000028130	225.1
No	W31BP	N31+	TX	LIC	BURLINGTON, ETC., NY	BLTTL19980120JE	136.3
Yes	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	34.8
No	WPXN-TV	D31	DT	LIC	NEW YORK, NY	BLANK0000037694	259.6
No	WWTI	D31	DT	CP	WATERTOWN, NY	BLANK0000028475	201.3
No	WSWB	D31	DT	LIC	SCRANTON, PA	BLCDT20140326AAZ	252.8
No	WRNT-LD	D32	LD	APP	HARTFORD, CT	BLANK0000053149	148.5
No	WGBX-TV	D32	DT	CP	BOSTON, MA	BLANK0000034938	202.9
No	WBPX-TV	D32	DT	LIC	BOSTON, MA	BLANK0000048989	204.0
No	WBTS-LD	N32	TX	LIC	BOSTON, MA	BLTTL19950414IE	213.0
No	WMNE-LP	D32	LD	CP	PORTLAND, ME	BMPDTL20120307ABN	274.1
No	WMNE-LP	N32z	TX	LIC	PORTLAND, ME	BLTT20020429AAV	270.0
No	W32EI-D	D32-	LD	APP	West Orange, NJ	BLANK0000033498	255.3
No	W32EI-D	D32-	LD	LIC	West Orange, NJ	BLANK0000015198	240.3
No	W32EI-D	N32-	TX	LIC	West Orange, NJ	BLTTL20121024AAB	207.2
No	WNLO	D32	DT	APP	BUFFALO, NY	BLANK0000036123	439.1
No	WNLO	D32	DT	LIC	BUFFALO, NY	BLANK0000053502	438.4
Yes	WUCB-LD	D32	LD	APP	COBLESKILL, NY	BLANK0000053835	91.2
No	W59DG	D32	LD	CP	ELMIRA, NY	BDISDTL20110829AAJ	286.5
No	WLIW	D32	DT	CP	GARDEN CITY, NY	BLANK0000034431	259.6
No	WXNY-LD	D32	LD	LIC	NEW YORK, NY	BLDTL20090908ACO	255.0
No	WTKO-CD	D32	DC	CP	ONEIDA, NY	BLANK0000034943	174.2
No	WCUL-LD	D32	LD	CP	SYLVAN BEACH, NY	BDCCDTL20130903AAR	184.2
No	WHP-TV	D32	DT	CP	HARRISBURG, PA	BLANK0000027770	406.7
No	WHP-TV	D32	DT	APP	HARRISBURG, PA	BLANK0000033781	406.7
No	WPSG	D32	DT	LIC	PHILADELPHIA, PA	BLANK0000001047	360.4
No	WQPX-TV	D32	DT	LIC	SCRANTON, PA	BLCDT20060629AFR	252.7
Yes	WETK	D32	DT	LIC	BURLINGTON, VT	BLEDT20061011ADW	176.8
No	WFSB	D33	DT	LIC	HARTFORD, CT	BLCDT20041029AIL	150.4
No	WCCT-TV	D33	DT	CP	WATERBURY, CT	BLANK0000034241	157.0
No	WCVB-TV	D33	DT	CP	BOSTON, MA	BLANK0000034567	202.9
No	WPXG-TV	D33	DT	LIC	CONCORD, NH	BLANK0000053337	179.8
No	WCBS-TV	D33	DT	CP	NEW YORK, NY	BMPCDT20080619AAZ	259.6
No	WCBS-TV	D33	DT	LIC	NEW YORK, NY	BLANK0000048556	259.6
No	WCBS-TV	D33	DT	LIC	NEW YORK, NY	BLCDT20090612AFN	255.4
No	WNGX-LD	D33	LD	APP	SCHENECTADY, NY	BLANK0000051695	0.0
No	WVVC-LD	D33	LD	LIC	UTICA, NY	BLDTL20110829AAZ	135.8
No	WQPX-TV	D33	DT	CP	SCRANTON, PA	BLANK0000034918	252.7
No	CHOT-DT	D32	DT	LIC	GATINEAU, QC	BLANKCANADA267	332.3

No non-directional AM stations found within 0.8 km

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

5.21.2018

Exhibit E-1 - TVStudy Interference Study

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D32
Mask: Full Service
Latitude: 43 1 12.20 N (NAD83)
Longitude: 73 31 26.40 W
Height AMSL: 451.3 m
HAAT: 306.6 m
Peak ERP: 1.71 kW
Antenna: SCA-PR-TV Array 0.0 deg
Elev Pattn: Generic

50.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	0.059 kW	305.2 m	26.3 km
45.0	0.009	247.0	15.3
90.0	0.014	213.5	15.2
135.0	0.009	266.8	15.6
180.0	0.142	285.6	30.2
225.0	0.378	385.2	39.2
270.0	0.017	361.8	21.4
315.0	0.694	383.3	42.9

Database HAAT does not agree with computed HAAT

Database HAAT: 307 m Computed HAAT: 306 m

Proposal 25.51 dBu contour does not cross Canadian border

Distance to Canadian border: 220.6 km

Distance to Mexican border: 2842.7 km

Conditions at FCC monitoring station: Canandaigua NY

Bearing: 269.0 degrees Distance: 304.6 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 274.0 degrees Distance: 2638.8 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 BLDTA20100812ABN LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	
Undesireds:	W47CM	D32	LD	CP	GLENS FALLS, NY	BLANK0000022023	34.8 km
	WVIT	D31	DT	CP	NEW BRITAIN, CT	BLANK0000034341	191.7
	WCSH	D31	DT	CP	PORTLAND, ME	BLANK0000034813	252.2
	WSKG-TV	D31	DT	CP	BINGHAMTON, NY	BLANK0000028130	225.9
	WWTI	D31	DT	CP	WATERTOWN, NY	BLANK0000028475	172.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
6899.3	438,117	5182.6	398,513	5164.5	398,447	5163.5 398,322	0.02 0.03
Undesired				Total IX	Unique IX, before	Unique IX, after	
W47CM D32 LD CP				1.0 125		1.0 125	
WVIT D31 DT CP				17.1 66	16.1 52	16.1 52	
WCSH D31 DT CP				2.0 14	1.0 0	1.0 0	

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

5.21.2018

Exhibit E-1 - TVStudy Interference Study

Interference to BLDTA20100812ABN LIC scenario 2

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	
Undesireds:	W47CM	D32	LD	CP	GLENS FALLS, NY	BLANK0000022023	34.8 km
	WVIT	D31	DT	CP	NEW BRITAIN, CT	BLANK0000034341	191.7
	WCSH	D31	DT	BL	PORTLAND, ME	DTVBL39664	252.2
	WSKG-TV	D31	DT	CP	BINGHAMTON, NY	BLANK0000028130	225.9
	WWTI	D31	DT	CP	WATERTOWN, NY	BLANK0000028475	172.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
6899.3	438,117	5182.6	398,513	5164.5	398,447	5163.5 398,322	0.02 0.03
Undesired		Total IX		Unique IX, before		Unique IX, after	
W47CM D32 LD CP		1.0	125			1.0 125	
WVIT D31 DT CP		17.1	66	16.1	52	16.1 52	
WCSH D31 DT BL		2.0	14	1.0	0	1.0 0	

Interference to BLDTA20100812ABN LIC scenario 3

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	
Undesireds:	W47CM	D32	LD	CP	GLENS FALLS, NY	BLANK0000022023	34.8 km
	WVIT	D31	DT	BL	NEW BRITAIN, CT	DTVBL74170	191.7
	WCSH	D31	DT	CP	PORTLAND, ME	BLANK0000034813	252.2
	WSKG-TV	D31	DT	CP	BINGHAMTON, NY	BLANK0000028130	225.9
	WWTI	D31	DT	CP	WATERTOWN, NY	BLANK0000028475	172.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
6899.3	438,117	5182.6	398,513	5175.5	398,493	5174.5 398,368	0.02 0.03
Undesired		Total IX		Unique IX, before		Unique IX, after	
W47CM D32 LD CP		1.0	125			1.0 125	
WVIT D31 DT BL		6.0	20	5.0	6	5.0 6	
WCSH D31 DT CP		2.0	14	1.0	0	1.0 0	

Interference to BLDTA20100812ABN LIC scenario 4

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	
Undesireds:	W47CM	D32	LD	CP	GLENS FALLS, NY	BLANK0000022023	34.8 km
	WVIT	D31	DT	BL	NEW BRITAIN, CT	DTVBL74170	191.7
	WCSH	D31	DT	BL	PORTLAND, ME	DTVBL39664	252.2
	WSKG-TV	D31	DT	CP	BINGHAMTON, NY	BLANK0000028130	225.9
	WWTI	D31	DT	CP	WATERTOWN, NY	BLANK0000028475	172.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
6899.3	438,117	5182.6	398,513	5175.5	398,493	5174.5 398,368	0.02 0.03
Undesired		Total IX		Unique IX, before		Unique IX, after	
W47CM D32 LD CP		1.0	125			1.0 125	
WVIT D31 DT BL		6.0	20	5.0	6	5.0 6	
WCSH D31 DT BL		2.0	14	1.0	0	1.0 0	

Interference to BLANK0000053835 APP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WUCB-LD	D32	LD	APP	COBLESKILL, NY	BLANK0000053835	
Undesireds:	W47CM	D32	LD	CP	GLENS FALLS, NY	BLANK0000022023	91.2 km
	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	95.2
	WGBX-TV	D32	DT	CP	BOSTON, MA	BLANK0000034938	272.0
	W32EI-D	D32-	LD	APP	West Orange, NJ	BLANK0000033498	208.2

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

5.21.2018

Exhibit E-1 - TVStudy Interference Study

WHP-TV	D32	DT	CP	HARRISBURG, PA	BLANK0000027770	322.2
WETK	D32	DT	LIC	BURLINGTON, VT	BLEDT20061011ADW	249.7
Service area		Terrain-limited		IX-free, before		IX-free, after
2564.2	48,706	1899.7	36,638	1889.7	36,571	1884.6 36,521
Undesired		Total IX		Unique IX, before		Unique IX, after
W47CM D32 LD CP	6.0	92		5.0	50	
WNCE-CD D31 DC LIC	3.0	42	1.0	42	0.0	0
WGBX-TV D32 DT CP	4.0	6	4.0	6	4.0	6
WETK D32 DT LIC	5.0	19	3.0	19	3.0	19

Interference to BLEDT20061011ADW LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WETK	D32	DT	LIC	BURLINGTON, VT	BLEDT20061011ADW	
Undesireds:	W47CM	D32	LD	CP	GLENS FALLS, NY	BLANK0000022023	176.8 km
	WCSH	D31	DT	CP	PORTLAND, ME	BLANK0000034813	183.3
	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	156.3
	WGBX-TV	D32	DT	CP	BOSTON, MA	BLANK0000034938	277.2
	WTKO-CD	D32	DC	CP	ONEIDA, NY	BLANK0000034943	280.6
	CHOT-DT	D32	DT	LIC	GATINEAU, QC	BLANKCANADA267	262.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
29808.8	666,125	24577.1	557,697	24242.4	553,002	24223.1 552,959	0.08 0.01
7293.5	467,736	6438.7	445,829	6388.1	445,293	6388.1 445,293	0.00 0.00 (in
Canada)							
Undesired		Total IX		Unique IX, before		Unique IX, after	
W47CM D32 LD CP	31.4	94		19.2	43		
WNCE-CD D31 DC LIC	18.2	51	16.2	51	7.1	0	
WGBX-TV D32 DT CP	143.3	1,792	141.3	1,792	139.3	1,792	
CHOT-DT D32 DT LIC	175.2	2,852	175.2	2,852	175.2	2,852	
CHOT-DT D32 DT LIC	50.6	536	50.6	536	50.6	536	(in Canada)

Interference to BLEDT20061011ADW LIC scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WETK	D32	DT	LIC	BURLINGTON, VT	BLEDT20061011ADW	
Undesireds:	W47CM	D32	LD	CP	GLENS FALLS, NY	BLANK0000022023	176.8 km
	WCSH	D31	DT	CP	PORTLAND, ME	BLANK0000034813	183.3
	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	156.3
	WGBX-TV	D32	DT	BL	BOSTON, MA	DTVBL72098	277.2
	WTKO-CD	D32	DC	CP	ONEIDA, NY	BLANK0000034943	280.6
	CHOT-DT	D32	DT	LIC	GATINEAU, QC	BLANKCANADA267	262.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
29808.8	666,125	24577.1	557,697	24313.0	554,100	24293.7 554,057	0.08 0.01
7293.5	467,736	6438.7	445,829	6388.1	445,293	6388.1 445,293	0.00 0.00 (in
Canada)							
Undesired		Total IX		Unique IX, before		Unique IX, after	
W47CM D32 LD CP	31.4	94		19.2	43		
WNCE-CD D31 DC LIC	18.2	51	16.2	51	7.1	0	
WGBX-TV D32 DT BL	72.7	694	70.7	694	68.7	694	
CHOT-DT D32 DT LIC	175.2	2,852	175.2	2,852	175.2	2,852	
CHOT-DT D32 DT LIC	50.6	536	50.6	536	50.6	536	(in Canada)

Interference to proposal scenario 1

**MX: 14.59% interference received

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	W47CM	D32	LD	CP	GLENS FALLS, NY	BLANK0000022023	
Undesireds:	WNCE-CD	D31	DC	LIC	GLENS FALLS, NY	BLDTA20100812ABN	34.8 km

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

Exhibit E-1 - TVStudy Interference Study

WGBX-TV	D32	DT	CP	BOSTON, MA	BLANK0000034938	202.9
WMNE-LP	D32	LD	CP	PORTLAND, ME	BMPDTL20120307ABN	274.1
W32EI-D	D32-	LD	APP	West Orange, NJ	BLANK0000033498	255.3
WETK	D32	DT	LIC	BURLINGTON, VT	BLEDT20061011ADW	176.8
WNGX-LD	D33	LD	APP	SCHENECTADY, NY	BLANK0000051695	0.0

Service area	Terrain-limited		IX-free	Percent IX	
2490.7 473,851	2250.0	436,789	1943.9	373,051	13.60 14.59

Undesired	Total IX		Unique IX	Prct Unique IX	
WNCE-CD D31 DC LIC	104.3	20,186	82.2	16,125	3.65 3.69
WGBX-TV D32 DT CP	4.0	215	0.0	0	0.00 0.00
WETK D32 DT LIC	25.1	21,840	10.1	18,218	0.45 4.17
WNGX-LD D33 LD APP	196.7	25,625	190.7	25,310	8.48 5.79

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

5.21.2018