

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

**KQCT-LP - DAVENPORT, IOWA
FACILITY ID: 68036**

DIGITAL NETWORKS—MIDWEST, LLC

MAY 2018

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JEREMY RUCK & ASSOCIATES, INC.

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5.14.2018

APPLICATION FOR CONSTRUCTION PERMIT - DISPLACEMENT

The following engineering statement and attached exhibits have been prepared for **Digital Networks-Midwest, LLC** ("Midwest"), licensee of low power digital television station KQCT-LP at Davenport, Iowa, and are in support of their application for construction permit.¹ This application is being filed as a displacement application due to the channel on the current digital construction permit being assigned to in market full-power television station KWQC-TV at Davenport, Iowa. In addition to the change in the channel of operation, Midwest also proposes a relocation of the facility, and a change in the associated technical parameters.

KQCT-LP is currently licensed on channel 61 with an outstanding construction permit for digital operation on channel 17 with a maximum effective radiated power of 15 kW at a center of radiation of 480 meters above mean sea level utilizing a directional antenna.

The proposed facility is located 34.4 kilometers, 21.4 miles from the licensed site. The proposed facility would operate on channel 32 with a maximum effective radiated power of 15.0 kW at a center of radiation of 324 meters above mean sea level utilizing a directional antenna. The antenna proposed for use by the facility is a PSI model PSILP8-AW. This antenna utilizes a wide cardioid pattern, and is oriented with its main lobe at 200 degree true.

The proposed operation on channel 32 would not result in interference to other proposed, authorized, or licensed facilities in excess of that permitted under the Commission's Rules. Exhibit

¹ The Facility ID for KQCT-LP is 68036.

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E-1 provides a tabular output from the *TVStudy* software package. As indicated, no outgoing interference failures would exist.

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 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 two meters above ground level assuming a downward radiation relative field of 0.3 is $5.64 \mu\text{W}/\text{cm}^2$. This value is less than the upper limit of the uncontrolled environment condition upper limit. Midwest 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 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 14, 2018

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Exhibit E-1 - TVStudy Interference Study

Study created: 2018.05.14 13:19:06

Study build station data: LMS TV 2018-05-13

Proposal: KQCT-LP D32 LD CP DAVENPORT, IA
File number: BMPDTL20120206AAB
Facility ID: 68036
Station data: User record
Record ID: 58
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	WMKB-LP	N25z	TX	LIC	ROCHELLE, IL	BLTTL20070813AFM	110.1 km
No	KMKI-LD	D31	LD	APP	Cedar Rapids, IA	BLANK0000052698	181.8
No	K39LW-D	D31	LD	APP	LANSING, IA	BLANK0000035575	202.8
No	WFLD	D31	DT	LIC	CHICAGO, IL	BLCDT20090223ABV	233.7
No	WQAD-TV	D31	DT	CP	MOLINE, IL	BLANK0000034243	34.5
No	W33AY-D	D31	LD	APP	SPRINGFIELD, IL	BLANK0000051745	216.0
No	W31DT-D	D31	LD	CP	STERLING - DIXON, IL	BDCCDTL20110726AJF	75.2
No	WITI	D31	DT	CP	MILWAUKEE, WI	BLANK0000034409	264.8
No	KFKZ-LD	D32	LD	LIC	Cedar Rapids, IA	BLANK000004385	186.7
Yes	KFKZ-LD	D32	LD	CP	Cedar Rapids, IA	BLANK000004670	140.9
No	K41DD-D	D32	LD	APP	DES MOINES, IA	BLANK0000053618	276.1
No	WICD	D32	DT	CP	CHAMPAIGN, IL	BLANK0000034392	273.1
No	WLS-TV	D32	LD	APP	CHICAGO, IL	BDRTCDT20090630AFT	233.7
No	WMEU-CD	D32	DC	LIC	CHICAGO, IL	BLDTA20131212ABK	233.7
Yes	WSPY-LD	D32	LD	LIC	Earlville, IL	BLANK0000013326	112.8
Yes	WSPY-LD	D32	LD	CP	Earlville, IL	BLANK0000013459	154.3
Yes	WSPY-LD	D32	LD	LIC	Earlville, IL	BLANK0000016586	154.3
No	W32EF-D	D32	LD	LIC	PEORIA, IL	BLANK0000010565	138.5
No	W32EF-D	D32	LD	CP	PEORIA, IL	BLANK0000010599	146.8
No	WLPD-CD	D32	DC	CP	PLANO, IL	BLANK0000034861	196.7
Yes	WTJR	D32	DT	LIC	QUINCY, IL	BLCDT20091110ADL	198.0
No	WANE-TV	D32	DT	CP	FORT WAYNE, IN	BLANK0000034806	442.1
No	WNDY-TV	D32	DT	LIC	MARION, IN	BLCDT20110706ABJ	411.7
No	K32LB-D	D32	LD	CP	ALBERT LEO, MN	BNPDTL20100510AJT	335.4
No	WCCO-TV	D32	DT	LIC	MINNEAPOLIS, MN	BMLCDT20120907ABQ	440.7
No	KSMO-TV	D32	DT	CP	KANSAS CITY, MO	BLANK0000024829	442.7
No	KUMO-LD	D32	LD	APP	ST LOUIS, MO	BLANK0000030456	338.6
Yes	WIFS	D32	DT	LIC	JANESVILLE, WI	BLCDT20040930BHL	177.0
No	WTMJ-TV	D32	DT	CP	MILWAUKEE, WI	BLANK0000034843	264.5
Yes	K20KF-D	D33	LD	APP	DAVENPORT, IA	BLANK0000051752	46.6
No	WMAQ-TV	D33	DT	CP	CHICAGO, IL	BLANK0000034535	233.7
No	WAOE	D33	DT	CP	PEORIA, IL	BLANK0000028263	132.7
No	W33DV-D	D33	LD	CP	PEORIA, IL	BDCCDTT20120713ADV	138.5
No	KTVO	D33	DT	APP	KIRKSVILLE, MO	BPCDT20130206ADL	207.4
No	KTVO	D33	DT	APP	KIRKSVILLE, MO	BLANK0000035797	207.4
No	KTVO	D33	DT	LIC	KIRKSVILLE, MO	BLCDT20030604AAC	207.4
No	WLAX	D33	DT	CP	LA CROSSE, WI	BLANK0000027619	254.6
No	WITI	D33	DT	LIC	MILWAUKEE, WI	BLANK0000040653	264.8

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D32
Mask: Full Service
Latitude: 41 37 11.20 N (NAD83)
Longitude: 90 25 58.60 W
Height AMSL: 324.0 m
HAAT: 116.8 m
Peak ERP: 15.0 kW
Antenna: PSILP8-AW 200.0 deg

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Exhibit E-1 - TVStudy Interference Study

Elev Pattn: Generic
Elec Tilt: 1.00

50.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	1.37 kW	121.0 m	33.1 km
45.0	1.83	126.5	35.0
90.0	8.62	114.6	42.0
135.0	14.8	129.9	45.8
180.0	13.6	130.9	45.5
225.0	13.2	121.6	44.7
270.0	14.9	95.5	42.7
315.0	7.75	94.4	39.4

Distance to Canadian border: 604.8 km

Distance to Mexican border: 1644.6 km

Conditions at FCC monitoring station: Allegan MI
Bearing: 72.0 degrees Distance: 385.0 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 267.4 degrees Distance: 1252.1 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%

---- Below is IX received by proposal BMPDTL20120206AAB ----

**MX with BLANK0000051752 APP scenario 1, 2.05% interference received
**MX with BLANK0000051752 APP scenario 2, 2.05% interference received

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