

ENGINEERING STATEMENT

The engineering data contained herein have been prepared on behalf of KDMI LICENSE LLC, licensee of full-power digital television station KDMI-DT, Channel 19 in Des Moines, Iowa, in support of its Application for Construction Permit to specify an increase in effective radiated power from its presently authorized value (839 kW) to 1,000 kW. No change in transmitter site location, antenna height above ground or above average terrain, or antenna model is proposed herein.

It is proposed to utilize the licensed Dielectric TFU-30GTH-R-O4 omnidirectional antenna, which is mounted at the 599-meter level of an existing 609-meter communications tower. An elevation pattern for the Dielectric antenna is provided in Exhibit B. Exhibit C is a map upon which the predicted service contours are plotted. As shown, the community of license, Des Moines, is completely encompassed by the proposed 48 dBu city-grade service contour. Operating parameters for the proposed facility are tabulated in Exhibit D. A detailed interference study is provided in Exhibit E. It is important to note that a cell size of 1 kilometer and an increment spacing of 0.1 kilometer was used for our study. A power density calculation appears as Exhibit F.

Since no change in the overall height or location of the existing tower is proposed herein, the Federal Aviation Administration has not been notified of this application. It is important to note that the FCC issued antenna structure registration number 1061304 to this structure.

EXHIBIT A

I declare under penalty of perjury that the foregoing statements and the attached exhibits, which were prepared by me or under my immediate supervision, are true and correct to the best of my knowledge and belief.

A handwritten signature in blue ink, appearing to read "K. T. Fisher", with a stylized flourish at the end.

KEVIN T. FISHER

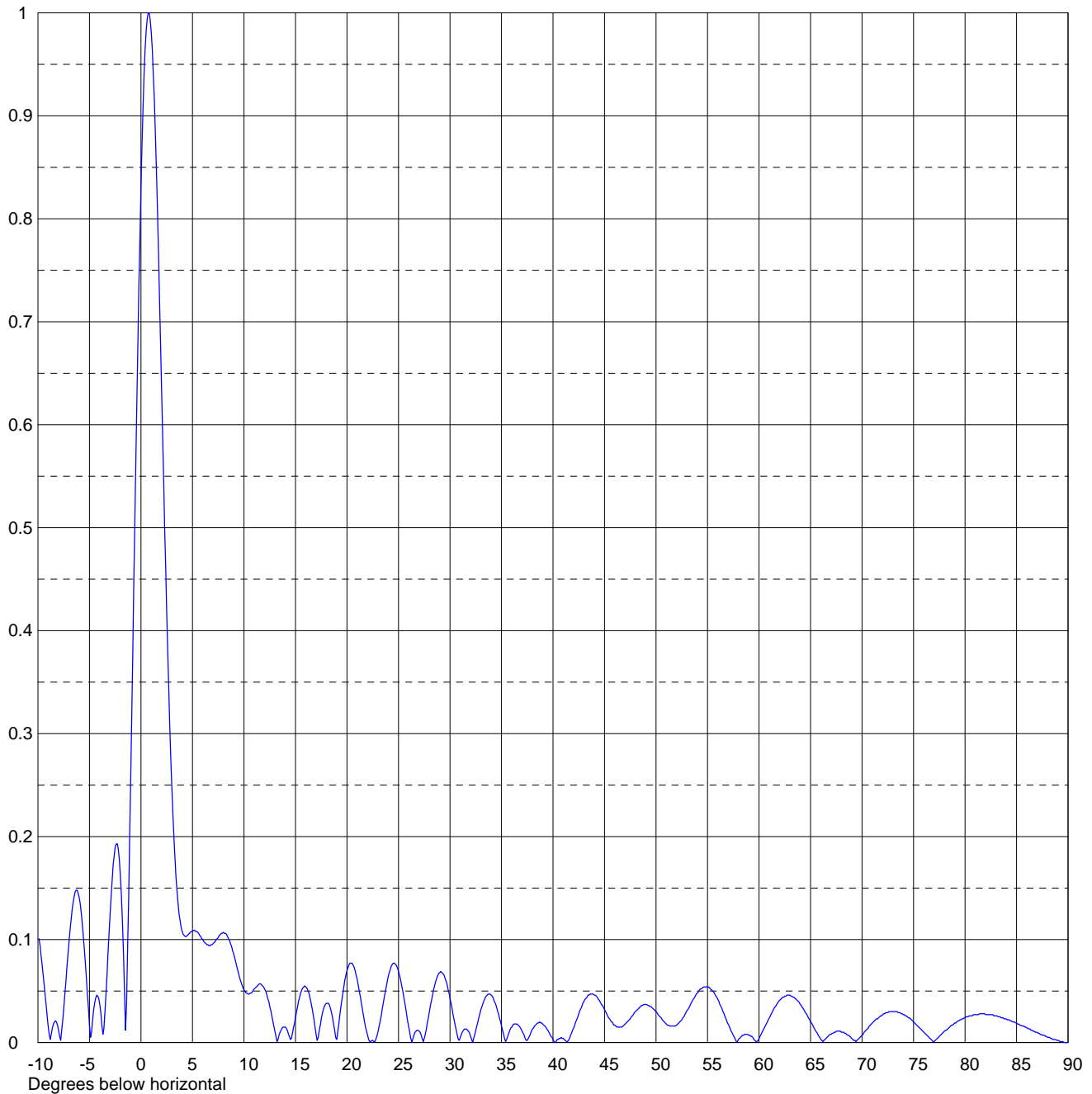
February 4, 2013



Date	04 Feb 2013		
Call Letters	KDMI-DT	Channel	19
Location	Des Moines, IA		
Customer			
Antenna Type	TFU-30GTH O4		

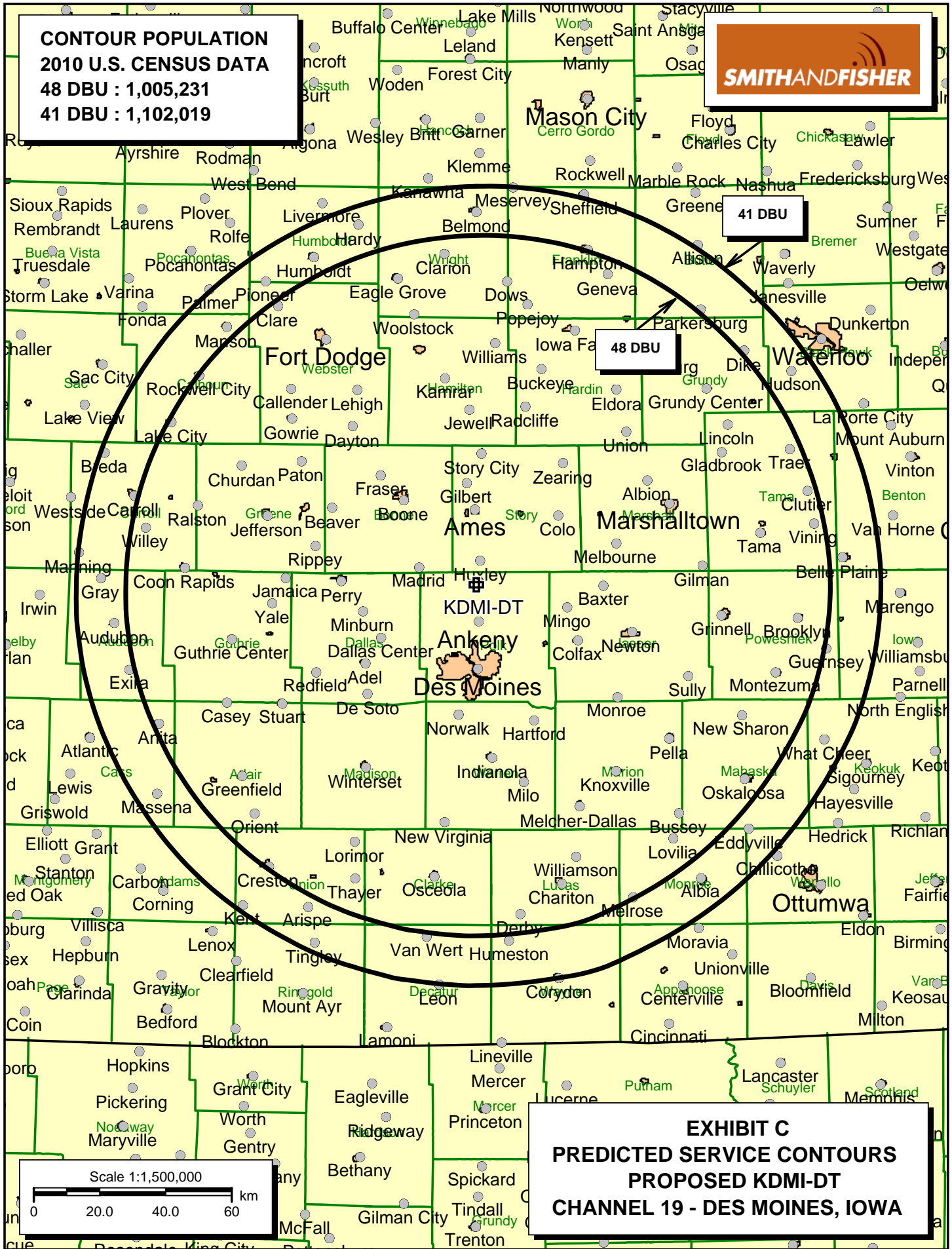
ELEVATION PATTERN

RMS Gain at Main Lobe	27.0 (14.31 dB)	Beam Tilt	0.75 Degrees
RMS Gain at Horizontal	18.7 (12.72 dB)	Frequency	503.00 MHz
Calculated / Measured	Calculated	Drawing #	30G270075-90



Remarks:

**CONTOUR POPULATION
2010 U.S. CENSUS DATA**
48 DBU : 1,005,231
41 DBU : 1,102,019



**EXHIBIT C
PREDICTED SERVICE CONTOURS
PROPOSED KDMI-DT
CHANNEL 19 - DES MOINES, IOWA**

PROPOSED OPERATING PARAMETERS

PROPOSED KDMI-DT
CHANNEL 19 – DES MOINES, IOWA

Transmitter Power Output:	18.05 dBk (63.8 kW)
Transmission Line Loss:	2.36 dB
Antenna Power Gain – Main Lobe:	14.31 dB
Effective Radiated Power – Main Lobe:	30.0 dBk (1,000 kW)

Transmitter Make and Model:	Type-accepted
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Antenna Make and Model:	Dielectric TFU-30GTH-R-O4
Orientation	Omnidirectional
Beam Tilt	0.75 degrees
Radiation Center Above Ground:	599 meters
Radiation Center Above Mean Sea Level:	903 meters

LONGLEY-RICE INTERFERENCE STUDY
PROPOSED KDMI-DT
CHANNEL 19 – DES MOINES, IOWA

We conducted a detailed interference study using the Longley-Rice methodology contained in the Commission's *OET Bulletin No. 69*, with respect to all facilities of concern. The software utilizes a 1-square kilometer cell size, calculates signal strength at 0.1 kilometer increments along each radial studied, and employs the 2000 U.S. Census to count population within cells. In addition, the program does not attribute interference to the proposed facility in cells within the protected contour of the station under study where interference from another source (other than the proposed KDMI-DT facility) already is predicted to exist (also known as "masking"). The results of this study are provided in Exhibit E-2. It concludes that the facility proposed herein causes no significant interference to any of the potentially affected stations.

As a result, it is believed that the proposed KDMI-DT facility complies with all of the interference requirements of the Commission's Rules.

It is important to note that the predicted interference to Petition for Rulemaking BPRM-20081219AFT, mentioned at the end of the SunDTV interference study, refers to the rulemaking which authorizes KDMI-DT to utilize Channel 19 in Des Moines. That petition for rulemaking has obviously been granted, and, therefore, this interference situation can be ignored.

EXHIBIT E-2

SUNDTV INTERFERENCE STUDY
PROPOSED KDMI-DT
CHANNEL 19 – DES MOINES, IOWA

KDMI_max_summary.txt
Summary Study

Percent allowed new interference: 0.500
Percent allowed new interference to non Class A LPTV: 2.000
Census data selected 2000
Data Base Selected
./data_files/pt_tvdb.sff

WARNING WARNING WARNING

The following list of station records has been excluded from the analysis due to the fact that they have the same state, city and channel as the proposed station - This could cause the program to not find a potential fail situation

You can force the program to include these records by setting the state of the proposed record to ZZ and re-running the analysis

KDMI 19 DES MOINES IA BLCDT 20120627AAE

TV INTERFERENCE and SPACING ANALYSIS PROGRAM

Date: 01-30-2013 Time: 12:29:11

Record Selected for Analysis

KDMI-D USERRECORD-01 DES MOINES IA US
Channel 19 ERP 1000. kW HAAT 609. m RCAMSL 00902 m
Latitude 041-49-48 Longitude 0093-36-54
Status APP Zone 2 Border Site number: 01
Dir Antenna Make usr Model USRPAT01 Beam tilt N Ref Azimuth 0.
Last update Cutoff date Docket
Comments
Applicant

Cell Size for Service Analysis 1.0 km/side

Distance Increments for Longley-Rice Analysis 0.10 km

Facility (site # 01) does not meet maximum height/power limits
Channel 19 ERP = 1000.00 HAAT = 609.

Site number 1			
Azimuth	ERP	HAAT	41.0 dBu F(50, 90)
(Deg)	(kW)	(m)	(km)
0.0	1000.000	597.4	120.4
45.0	1000.000	614.5	121.4
90.0	1000.000	630.9	122.3
135.0	1000.000	603.1	120.8
180.0	1000.000	610.0	121.1
225.0	1000.000	621.8	121.8
270.0	1000.000	606.3	120.9
315.0	1000.000	587.6	119.9

KDMI_max_summary.txt
Evaluation toward Class A Stations from site # 01

No Spacing violations or contour overlap
to Class A stations from site # 01

Class A Evaluation Complete

SPACING VIOLATION FOUND BETWEEN STATION

KDMI -D 19 DES MOINES IA USERRECORD01 Site # 01

and station

SHORT TO: KDMI -DR 19 DES MOINES IA BPRM 20081219AFT
041-49-48 0093-36-54
Req. separation 223.7 Actual separation 0.0 Short 223.7 km

SHORT TO: KDMI 19 DES MOINES IA DTVPLN DTVP0660
41 -49-48 93 -36-56
Req. separation 223.7 Actual separation 0.0 Short 223.7 km

LANDMOBILE SPACING VIOLATIONS FOUND

NONE from Site # 01

Checks to Site Number 01

Proposed facility OK to FCC Monitoring Stations

Proposed facility OK toward West Virginia quiet zone

Proposed facility OK toward Table Mountain

Proposed facility is beyond the Canadian coordination distance

Proposed facility is beyond the Mexican coordination distance

Proposed station is OK toward AM broadcast stations

Start of Interference Analysis

Channel	Proposed Station Call	City/State	ARN
19	KDMI -D	DES MOINES IA	USERRECORD01

Stations Potentially Affected by Proposed Station

Chan	Call	City/State	Dist(km)	Status	Application Ref. No.
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KDMI_max_summary.txt							
18	KYIN	MASON CITY IA	197.4	LIC	BLEDT	20090612AHJ	
19	KDMI-DR	DES MOINES IA	0.0	APP	BPRM	20081219AFT	
19	WHOI	PEORIA IL	361.1	LIC	BLCDD	20090622AFB	
19	KXNE-TV	NORFOLK NE	305.8	LIC	BLEDT	20090615ADS	
19	WMTV	MADISON WI	364.7	LIC	BLCDD	20100413AAW	
20	KSMQ-TV	AUSTIN MN	220.2	LIC	BLEDT	20081223AAK	
20	KETV	OMAHA NE	208.7	LIC	BLCDD	20041222AED	

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Study of this proposal found the following interference problem(s):

The following station failed the de minimis interference criteria.

19D IA DES MOINES USERRECORD01
 ERP 1000.00 kW HAAT 609.0 m RCAMSL 902.0 m
 Antenna usr USRPAT01

Due to interference to the following station and scenario: 1

19D IA DES MOINES BPRM 20081219AFT
 ERP 839.00 kW HAAT 610.0 m RCAMSL 902.0 m
 Antenna 9999999999999999

Percent new interference from proposal: 14.0272 to BPRM 20081219AFT

Proposed station is MX

19A IA DES MOINES	USERRECORD01	APP
19A IA DES MOINES	BPRM 20081219AFT	APP

Proposal MX with BPRM 20081219AFT scenario 1 of station 2

Proposal is MX with BPRM 20081219AFT in scenario 2

POWER DENSITY CALCULATION

PROPOSED KDMI-DT
CHANNEL 19 – DES MOINES, IOWA

Since the FCC considers the possible biological effects of RF transmissions in its environmental determinations, we have studied the matter with respect to this Des Moines facility. Employing the methods set forth in *OET Bulletin No. 65* and considering a main-lobe effective radiated power of 1,000 kW, an antenna radiation center 599 meters above ground, and the specific elevation pattern for the existing Dielectric antenna, maximum power density two meters above ground of 0.00018 mW/cm^2 is calculated to occur 418 meters from the base of the tower. Since this value is less than 0.1 percent of the 0.33 mW/cm^2 reference for uncontrolled environments (areas with public access) surrounding a facility operating on Channel 19 (500-506 MHz), a grant of this proposal may be considered a minor environmental action with respect to public exposure to non-ionizing electromagnetic radiation.

Further, the station owner will take whatever precautionary steps are necessary, such as reducing power or leaving the air temporarily, to ensure that workers operating in the vicinity of the antenna are not exposed to excessive non-ionizing radiation.