

**KMJF-LD CH 16 DISPLACEMENT APPLICATION COLUMBUS, NEBRASKA  
ENVIRONMENTAL CERTIFICATION & TVStudy Report  
SEPTEMBER 14, 2017**

This application is being filed for the purpose of specifying operation on CH 16 due to displacement on CH 48 by T-Mobile. No change in tower site, antenna, RC AGL or ERP are proposed. The site is an SBA lease site with no other known broadcast tenants. The TV antenna is mounted on the side of the existing tower. An equipment shelter is located at the tower base so no new construction is required. The tower, building and utilities are existing. No on ground construction is proposed.

The existing antenna system consists of an Alive Telecommunications ("ATC") model ATC-BBO10-U, broadband, horizontally polarized, UHF TV antenna with a peak gain of 11.09 db. The antenna radiation center is 76.2 meters (250 feet) above ground. Utilizing formula 10 of OET Bulletin No. 65, Edition 97-01, a value F of 0.25 has been used to calculate the power density 2 meters above ground. The maximum power density is 4.55 uw/cm squared for an ERP OF 12,000 watts H. polarization. This value is 1.4% of the Public Exposure MPE per section 1.1310, 321 microwatts per cm squared for CH 16. Based on this analysis it is believed that the proposed facility is in compliance with OET-65 Guidelines.

The licensee will comply with OET-65 Guidelines for worker safety and reduce power or cease transmission as required.

#### TVStudy Report

Study created: 2017.09.14 12:37:59

Study build station data: LMS TV 2017-08-01 (10)

Proposal: KMJF-LD D16 LD LIC COLUMBUS, NE  
File number: BLANK0000010866  
Facility ID: 185295  
Station data: User record  
Record ID: 91  
Country: U.S.

Build options:  
Protect records not on baseline channel

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	
Distance						
KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE	305.0
km						

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D16  
Mask: Full Service  
Latitude: 41 27 9.30 N (NAD83)  
Longitude: 97 15 10.80 W  
Height AMSL: 524.9 m  
HAAT: 0.0 m  
Peak ERP: 12.0 kW  
Antenna: Omnidirectional  
Elev Pattn: Generic  
Elec Tilt: 0.75

48.9 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	12.0 kW	59.9 m	38.2 km
45.0	12.0	72.3	40.1
90.0	12.0	104.2	44.5
135.0	12.0	100.3	44.0
180.0	12.0	86.9	42.3
225.0	12.0	88.1	42.5
270.0	12.0	82.9	41.7
315.0	12.0	58.8	38.0

Database HAAT does not agree with computed HAAT  
Database HAAT: 0 m Computed HAAT: 82 m

Distance to Canadian border: 830.7 km

Distance to Mexican border: 1350.2 km

Conditions at FCC monitoring station: Grand Island NE  
Bearing: 239.5 degrees Distance: 114.6 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 260.5 degrees Distance: 685.9 km

No land mobile station failures found

Proposal is not within the Offshore Radio Service protected area

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%

No IX check failures found.

tvstudy v2.2.3 (ujVPF2)  
Database: 127.0.0.1, Study: BLANK0000010866 (340), Model: Longley-Rice  
Start: 2017.09.14 12:39:44

Study created: 2017.09.14 12:37:59

Study build station data: LMS TV 2017-08-01 (10)

Proposal: KMJF-LD D16 LD LIC COLUMBUS, NE  
File number: BLANK0000010866  
Facility ID: 185295  
Station data: User record  
Record ID: 91  
Country: U.S.

Build options:  
Protect records not on baseline channel

Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE	305.0 km

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D16  
Mask: Full Service  
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Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 260.5 degrees Distance: 685.9 km

No land mobile station failures found

Proposal is not within the Offshore Radio Service protected area

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%

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 Interference to BLCDT20110609ABE LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	
Distance							
Desired:	KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE	
Undesireds:	KMJF-LD	D16	LD	LIC	COLUMBUS, NE	BLANK0000010866	305.0
km							
	KYOU-TV	D15	DT	LIC	OTTUMWA, IA	BLANK0000001581	155.2
	WTVO	D16	DT	LIC	ROCKFORD, IL	BLCDT20021024AAS	370.2
	WRSP-TV	D16	DT	CP	SPRINGFIELD, IL	BLANK0000027778	417.0
	KTKA-TV	D16	DT	CP	TOPEKA, KS	BLANK0000028133	367.5
	KPXM-TV	D16	DT	CP	ST. CLOUD, MN	BLANK0000027013	395.0
	KDAO-CD	D17-	DC	CP	MARSHALLTOWN, IA	BLANK0000026578	63.3

	Service area		Terrain-limited		IX-free, before		IX-free, after	
Percent New IX								
45439.2	1,098,955	45228.6	1,098,414	45141.1	1,096,802	45138.1	1,096,798	0.01
0.00								

Undesired		Total IX	Unique IX, before	Unique IX, after
KMJF-LD D16 LD LIC	3.0	4		3.0
KYOU-TV D15 DT LIC	68.5	254	68.5	254
WTVO D16 DT LIC	11.0	71	11.0	71
KPXM-TV D16 DT CP	6.0	10	6.0	10
KDAO-CD D17- DC CP	2.0	1,277	2.0	1,277

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 Interference to BLCDT20110609ABE LIC, scenario 2

	Call	Chan	Svc	Status	City, State	File Number	
Distance							
Desired:	KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE	
Undesireds:	KMJF-LD	D16	LD	LIC	COLUMBUS, NE	BLANK0000010866	305.0
km							
	KYOU-TV	D15	DT	LIC	OTTUMWA, IA	BLANK0000001581	155.2
	WTVO	D16	DT	LIC	ROCKFORD, IL	BLCDT20021024AAS	370.2
	WRSP-TV	D16	DT	CP	SPRINGFIELD, IL	BLANK0000027778	417.0
	KTKA-TV	D16	DT	CP	TOPEKA, KS	BLANK0000028133	367.5
	KPXM-TV	D16	DT	CP	ST. CLOUD, MN	BLANK0000027013	395.0
	KDAO-CD	D17	DC	BL	MARSHALLTOWN, IA	DTVBL46753	63.3

	Service area		Terrain-limited		IX-free, before		IX-free, after	
Percent New IX								
45439.2	1,098,955	45228.6	1,098,414	45141.1	1,096,802	45138.1	1,096,798	0.01
0.00								

Undesired		Total IX	Unique IX, before	Unique IX, after
KMJF-LD D16 LD LIC	3.0	4		3.0
KYOU-TV D15 DT LIC	68.5	254	68.5	254
WTVO D16 DT LIC	11.0	71	11.0	71
KPXM-TV D16 DT CP	6.0	10	6.0	10
KDAO-CD D17 DC BL	2.0	1,277	2.0	1,277

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 Interference to BLCDT20110609ABE LIC, scenario 3

	Call	Chan	Svc	Status	City, State	File Number
Distance						
Desired:	KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE

Undesireds:	KMJF-LD	D16	LD	LIC	COLUMBUS, NE	BLANK0000010866	305.0
km							
	KYOU-TV	D15	DT	LIC	OTTUMWA, IA	BLANK0000001581	155.2
	WTVO	D16	DT	LIC	ROCKFORD, IL	BLCDT20021024AAS	370.2
	WRSP-TV	D16	DT	CP	SPRINGFIELD, IL	BLANK0000027778	417.0
	KTKA-TV	D16	DT	CP	TOPEKA, KS	BLANK0000028133	367.5
	KPXM-TV	D16	DT	BL	ST. CLOUD, MN	DTVBL35907	395.0
	KDAO-CD	D17-	DC	CP	MARSHALLTOWN, IA	BLANK0000026578	63.3

	Service area		Terrain-limited		IX-free, before		IX-free, after	
Percent New IX								
45439.2	1,098,955	45228.6	1,098,414	45140.1	1,096,802	45137.1	1,096,798	0.01
0.00								

Undesired				Total IX		Unique IX, before		Unique IX, after
KMJF-LD D16 LD LIC		3.0		4			3.0	4
KYOU-TV D15 DT LIC		68.5		254		68.5	254	68.5
WTVO D16 DT LIC		11.0		71		11.0	71	11.0
KPXM-TV D16 DT BL		7.0		10		7.0	10	7.0
KDAO-CD D17- DC CP		2.0		1,277		2.0	1,277	2.0

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Interference to BLCDT20110609ABE LIC, scenario 4

	Call	Chan	Svc	Status	City, State	File Number	
Distance							
Desired:	KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE	
Undesireds:	KMJF-LD	D16	LD	LIC	COLUMBUS, NE	BLANK0000010866	305.0
km							
	KYOU-TV	D15	DT	LIC	OTTUMWA, IA	BLANK0000001581	155.2
	WTVO	D16	DT	LIC	ROCKFORD, IL	BLCDT20021024AAS	370.2
	WRSP-TV	D16	DT	CP	SPRINGFIELD, IL	BLANK0000027778	417.0
	KTKA-TV	D16	DT	CP	TOPEKA, KS	BLANK0000028133	367.5
	KPXM-TV	D16	DT	BL	ST. CLOUD, MN	DTVBL35907	395.0
	KDAO-CD	D17	DC	BL	MARSHALLTOWN, IA	DTVBL46753	63.3

	Service area		Terrain-limited		IX-free, before		IX-free, after	
Percent New IX								
45439.2	1,098,955	45228.6	1,098,414	45140.1	1,096,802	45137.1	1,096,798	0.01
0.00								

Undesired				Total IX		Unique IX, before		Unique IX, after
KMJF-LD D16 LD LIC		3.0		4			3.0	4
KYOU-TV D15 DT LIC		68.5		254		68.5	254	68.5
WTVO D16 DT LIC		11.0		71		11.0	71	11.0
KPXM-TV D16 DT BL		7.0		10		7.0	10	7.0
KDAO-CD D17 DC BL		2.0		1,277		2.0	1,277	2.0

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Interference to proposal, scenario 1

Distance	Call	Chan	Svc	Status	City, State	File Number	
Desired:	KMJF-LD	D16	LD	LIC	COLUMBUS, NE	BLANK0000010866	
Undesireds:	KIUA-LD	D15	LD	CP	LINCOLN, NE	BNPDTL20091023ACU	66.1
km	KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE	305.0
	KEJK-LD	D16	LD	LIC	SIOUX CITY, IA	BLANK0000010491	138.9
Service area		Terrain-limited				IX-free	Percent IX
5362.1	57,596	5314.7	57,434	5302.6	57,393	0.23	0.07
Undesired				Total IX		Unique IX	Prcnt Unique IX
KIUA-LD D15 LD CP		2.0		3	2.0	3	0.04 0.01
KDSM-TV D16 DT LIC		10.1		38	10.1	38	0.19 0.07

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Interference to proposal, scenario 2

Distance	Call	Chan	Svc	Status	City, State	File Number	
Desired:	KMJF-LD	D16	LD	LIC	COLUMBUS, NE	BLANK0000010866	
Undesireds:	KDSM-TV	D16	DT	LIC	DES MOINES, IA	BLCDT20110609ABE	305.0
km	KEJK-LD	D16	LD	LIC	SIOUX CITY, IA	BLANK0000010491	138.9
Service area		Terrain-limited				IX-free	Percent IX
5362.1	57,596	5314.7	57,434	5304.7	57,396	0.19	0.07
Undesired				Total IX		Unique IX	Prcnt Unique IX
KDSM-TV D16 DT LIC		10.1		38	10.1	38	0.19 0.07