

ENGINEERING REPORT

**FM Translator
Minor Change
Permit Application
(Amendment)**

for

**K288GA
Fac ID: 138081**

as a Translator for
KNWC(FM) – Sioux Falls, SD

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Discussion

This firm of Munn-Reese has been retained to prepare the required engineering report in support of a Minor Change Application for an FM Translator K288GA – Sioux Falls, SD. Presently K288GA is licensed to operate with 220 watts ERP at 509 meters AMSL operating on CH288D. Operation at a different site with 220 watts ERP at 506 meters AMSL operating at CH288D is proposed.

The Translator as proposed will be mounted on a tower bearing Antenna Registration Number: 1275764. The translator will be tri-plexed with W298CY and KNWC-FM(AUX).

A map of the present and proposed service area has been included in **Exhibit 1.0**.

It has been determined the Translator may be used in the area without interference to any existing FM broadcast station or facility. The present and proposed allocation details are found in **Exhibits 2.0**. It is believed sufficient clearance exists precluding the need for additional contour protection showings. The present and proposed facilities have overlap of filed strength contours with translator K286CN. Per 74.1204(c) a change in facilities will be accepted when the overlap does not increase or if the proposed facilities does not cause the overlap to move closer to the station receiving the overlap. The present and proposed allocations are provided in **Exhibits 2.0** to demonstrate the reduction in overlap of filed strength contours with 2nd adjacent K286CN, and demonstrate that the proposed facilities are moving farther away from K286CN .

The applicant certifies the proposed translator 34 dBu F(50:10) Interference contour does not enter Canadian territory. Documentation of the proposed 34 dBu F(50:10) Interference contour will be supplied upon request.

This translator is not within the affected distance of any TV Channel 6 stations.

The applicant would like to note use of the NED 03 second terrain database for terrain-based showings contained here-in.

Exhibit 1.0 - Present and Proposed Service Contours

K288GA

BLFT20081023ABE
Latitude: 43-32-02.99 N
Longitude: 096-44-21.92 W
ERP: 0.22 kW
Channel: 288
Frequency: 105.5 MHz
AMSL Height: 509.0 m
Elevation: 457.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

K288GA.P

Proposed Operation
Latitude: 43-29-14 N
Longitude: 096-47-04 W
ERP: 0.22 kW
Channel: 288
Frequency: 105.5 MHz
AMSL Height: 506.0 m
Elevation: 453.0 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None



K288GA.P - HAAT

N. Lat. = 432914.0 W. Lng. = 964704.0
HAAT and Distance to Contour,
FCC, FM 2-10 Mi, 51 pts Method - NED 03 SEC

| Azi. | AV EL | HAAT | ERP kW | dBk | 60-F5 |
|------|-------|------|--------|-------|-------|
| 000 | 448.7 | 57.3 | 0.2200 | -6.58 | 9.64 |
| 030 | 440.9 | 65.1 | 0.2200 | -6.58 | 10.22 |
| 060 | 439.7 | 66.3 | 0.2200 | -6.58 | 10.30 |
| 090 | 438.4 | 67.6 | 0.2200 | -6.58 | 10.39 |
| 120 | 432.3 | 73.7 | 0.2200 | -6.58 | 10.81 |
| 150 | 436.2 | 69.8 | 0.2200 | -6.58 | 10.55 |
| 180 | 430.2 | 75.8 | 0.2200 | -6.58 | 10.95 |
| 210 | 434.3 | 71.7 | 0.2200 | -6.58 | 10.68 |
| 240 | 445.1 | 60.9 | 0.2200 | -6.58 | 9.92 |
| 270 | 468.6 | 37.4 | 0.2200 | -6.58 | 7.61 |
| 300 | 468.5 | 37.5 | 0.2200 | -6.58 | 7.62 |
| 330 | 452.9 | 53.1 | 0.2200 | -6.58 | 9.26 |

Ave El= 444.65 M HAAT= 61.35 M AMSL= 506.0

Munn-Reese.com

 K288GA (288)
 K288GA.P (288)

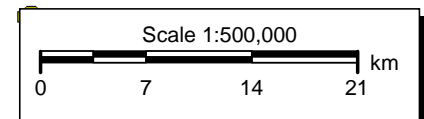
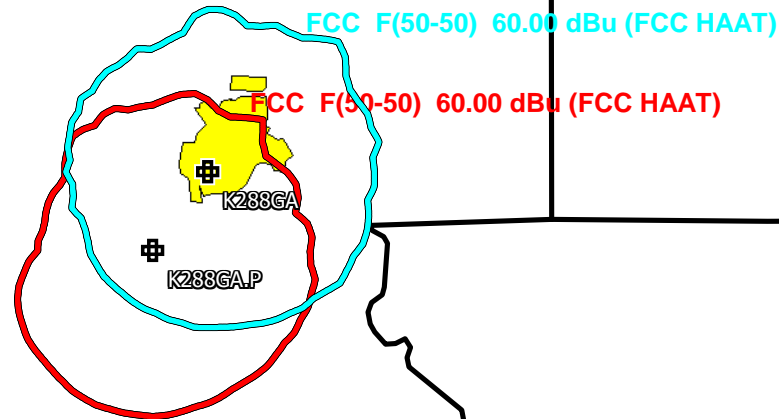


Exhibit 2.0 - Present Allocation
University Of Northwestern - St. Paul
CH# 288D - 105.5 MHz, Pwr= 0.22 kw, HAAT= 67.5 M, COR= 509 M
Average Protected F(50-50)= 10.39 km
Omni-directional

REFERENCE
43 32 02.90 N.
96 44 23.10 W.

DISPLAY DATES
DATA 08-10-20
SEARCH 08-11-20

| CH CITY | CALL | TYPE STATE | ANT STATE | AZI <-- | DIST FILE # | LAT LNG | PWR(kw) HAAT(M) | INT(km) COR(M) | PRO(km) LICENSEE | *IN* (Overlap in km) | *OUT* |
|---------------------|---------|---------------|--------------|----------------|---------------------------|----------------------------|--------------------|-------------------|---------------------|-------------------------|-------------------------------------|
| 288D Sioux Falls | K288GA | LIC SD | --- | 0.0 0.0 | 0.00 BLFT20081023ABE | 43 32 02.90 96 44 23.10 | 0.220 68 | 509 | ---Reference--- | | University Of Northwestern |
| 286D Sioux Falls | K286CN | LIC SD | --- | 50.1 230.1 | 1.39 BLFT20171018AAS | 43 32 31.90 96 43 35.20 | 0.250 | 1.1 493 | 8.2 | -11.5* | -7.8* Midwest Communications, In |
| 287C2 Sheldon | KIWA-FM | LIC IA | --- | 118.7 299.3 | 80.79 BLH20140430ACH | 43 10 52.90 95 51 57.10 | 50.000 89 | 68.2 522 | 43.1 | 1.4 | 21.1 Sheldon Broadcasting Co., |
| 291C2 Slayton | KJOE | LIC MN | --- | 57.3 237.9 | 75.41 BLH20160119AAM | 43 53 51.90 95 56 51.10 | 10.000 330 | 5.2 851 | 53.0 | 58.3 | 21.3 Wallace Christensen |
| 288D Brookings | K288EV | LIC SD | --- | 356.7 176.7 | 86.11 BMLFT20030520AAQ | 44 18 26.80 96 48 05.10 | 0.250 53 | 35.0 549 | 10.3 | 40.5 | 39.5 University Of Northwestern |
| 289C2 Winnebago | KSUX | LIC N NE | --- | 172.3 352.4 | 133.68 BLH19910327KA | 42 20 32.90 96 31 14.10 | 50.000 141 | 82.4 516 | 55.7 | 40.9 | 63.7 Ksux/kscj Radio Broadcasti |
| 290C1 Mitchell | KMIT | LIC SD | --- | 281.1 100.1 | 123.17 BLH20010919AAS | 43 44 15.90 98 14 40.30 | 100.000 199 | 8.5 618 | 64.9 | 105.2 | 57.2 Saga Communications Of Sou |
| 286C2 Tracy | KARL | LIC N MN | --- | 38.0 218.6 | 112.09 BMLH20080813ADU | 44 19 31.90 95 52 20.10 | 45.000 153 | 4.8 594 | 44.5 | 95.2 | 66.4 Subarctic Media, LLC |
| 289C3 Jackson | KUXX | LIC MN | --- | 85.8 267.0 | 143.34 BLH19940502KE | 43 36 53.80 94 57 48.90 | 25.000 100 | 55.3 527 | 34.8 | 76.5 | 93.0 Community First Broadcasti |
| 288A Montevideo | KMGH | LIC MN | --- | 30.7 211.4 | 171.59 BLH19821019AP | 44 51 23.80 95 37 47.10 | 3.000 90 | 71.6 398 | 21.5 | 88.2 | 113.7 Iowa City Broadcasting Com |
| 287C1 Orchard | KGRD | LIC NE | --- | 226.5 45.4 | 190.05 BLED19990707KB | 42 20 45.00 98 25 06.30 | 100.000 153 | 90.3 744 | 60.4 | 90.0 | 116.0 The Praise Network, Inc. |
| 285C3 Spencer | KMRR | LIC IA | --- | 101.5 282.6 | 131.85 BLH19970508KE | 43 17 12.80 95 08 34.90 | 25.000 85 | 3.7 521 | 35.7 | 117.1 | 94.7 Saga Communications Of Iow |

Terrain database is NED 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
In & Out distances between contours are shown at closest points. Reference zone= West Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.

| <div> <div> <div>REFERENCE</div> <div>43 29 14.00 N.</div> <div>96 47 04.00 W.</div> </div> <div> <div>CH# 288D - 105.5 MHz, Pwr= 0.22 kw, HAAT= 61.4 M, COR= 506 M</div> <div>University Of Northwestern - St. Paul</div> <div>Average Protected F(50-50)= 9.96 km</div> <div>Omni-directional</div> </div> <div> <div>DISPLAY DATES</div> <div>DATA 08-20-20</div> <div>SEARCH 08-25-20</div> </div> </div> | | | | | | | | | | | |
|---|---------|-------|-----|-------|------------------|-------------|---------|---------|----------------------------|----------|---------|
| CH | CALL | TYPE | ANT | AZI | DIST | LAT | PWR(kw) | INT(km) | PRO(km) | *IN* | *OUT* |
| CITY | | STATE | | <-- | FILE # | LNG | HAAT(M) | COR(M) | LICENSEE | (Overlap | in km) |
| 288D | K288GA | LIC | ___ | 34.6 | 6.34 | 43 32 02.90 | 0.220 | 32.7 | 9.8 | -37.2*< | -39.9*< |
| Sioux Falls | | SD | | 214.7 | BLFT20081023ABE | 96 44 23.10 | 68 | 509 | University Of Northwestern | | |
| 286D | K286CN | LIC | ___ | 37.4 | 7.69 | 43 32 31.90 | 0.250 | 1.1 | 8.6 | -4.5*< | -2.0*< |
| Sioux Falls | | SD | | 217.4 | BLFT20171018AAS | 96 43 35.20 | | 493 | Midwest Communications, In | | |
| 287C2 | KIWA-FM | LIC | ___ | 114.3 | 81.69 | 43 10 52.90 | 50.000 | 67.4 | 42.6 | 3.5 | 23.9 |
| Sheldon | | IA | | 294.9 | BLH20140430ACH | 95 51 57.10 | 89 | 522 | Sheldon Broadcasting Co., | | |
| 291C2 | KJOE | LIC | ___ | 55.6 | 81.29 | 43 53 51.90 | 10.000 | 5.2 | 52.9 | 66.0 | 27.4 |
| Slayton | | MN | | 236.1 | BLH20160119AAM | 95 56 51.10 | 330 | 851 | Wallace Christensen | | |
| 289C2 | KSUX | LIC | N__ | 170.3 | 129.07 | 42 20 32.90 | 50.000 | 82.2 | 55.6 | 36.1 | 58.2 |
| Winnebago | | NE | | 350.5 | BLH19910327KA | 96 31 14.10 | 141 | 516 | Ksux/kscj Radio Broadcasti | | |
| 288D | K288EV | LIC | ___ | 359.2 | 91.20 | 44 18 26.80 | 0.250 | 34.5 | 10.3 | 47.0 | 48.9 |
| Brookings | | SD | | 179.1 | BMLFT20030520AAQ | 96 48 05.10 | 53 | 549 | University Of Northwestern | | |
| 290C1 | KMIT | LIC | ___ | 283.8 | 120.78 | 43 44 15.90 | 100.000 | 8.4 | 64.6 | 104.9 | 55.2 |
| Mitchell | | SD | | 102.8 | BLH20010919AAS | 98 14 40.30 | 199 | 618 | Saga Communications Of Sou | | |
| 286C2 | KARL | LIC | N__ | 37.8 | 118.42 | 44 19 31.90 | 45.000 | 4.9 | 44.6 | 102.4 | 72.8 |
| Tracy | | MN | | 218.4 | BMLH20080813ADU | 95 52 20.10 | 153 | 594 | Subarctic Media, LLC | | |
| 289C3 | KUXX | LIC | ___ | 83.8 | 147.40 | 43 36 53.80 | 25.000 | 55.7 | 35.0 | 81.2 | 97.7 |
| Jackson | | MN | | 265.1 | BLH19940502KE | 94 57 48.90 | 100 | 527 | Community First Broadcasti | | |
| 287C1 | KGRD | LIC | ___ | 226.9 | 183.85 | 42 20 45.00 | 100.000 | 90.2 | 60.4 | 83.4 | 109.3 |
| Orchard | | NE | | 45.8 | BLED19990707KB | 98 25 06.30 | 153 | 744 | The Praise Network, Inc. | | |
| 288A | KMGH | LIC | ___ | 30.8 | 177.92 | 44 51 23.80 | 3.000 | 71.5 | 21.5 | 96.0 | 121.5 |
| Montevideo | | MN | | 211.6 | BLH19821019AP | 95 37 47.10 | 90 | 398 | Iowa City Broadcasting Com | | |
| 285C3 | KMRR | LIC | ___ | 99.0 | 134.47 | 43 17 12.80 | 25.000 | 3.7 | 36.0 | 120.0 | 97.5 |
| Spencer | | IA | | 280.1 | BLH19970508KE | 95 08 34.90 | 85 | 521 | Saga Communications Of Iow | | |

Terrain database is NED 03 SEC , R= 73.215 qualifying spacings or FCC minimum Spacings in KM, M= Margin in KM
Contour distances are on direct line to and from reference station. Reference zone= West Zone, Co to 3rd adjacent.
All separation margins (if shown) include rounding.
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, _= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)
"*"affixed to 'IN' or 'OUT' values = site inside restricted contour.
< = Contour Overlap