

TPO Calculation Summary

Main Antenna Operation

Call letters: **KNWC**
 City of License: **Sioux Falls, SD**
 Frequency: **CH243C (96.5 MHz)**
 File No: **BXPED-20181113AAY**
 Facility ID: **49776**
 Applicant: **University of Northwestern-St. Paul**

Operating Effective Radiated Power (ERP): **2.000 kW**

Antenna Make: **Shively**
 Antenna Model: **6832**
 No of Elements: **2**
 Antenna COR AGL: **53 meters AGL**
 Antenna COR AMSL: **506 meters AMSL**
 Power Gain: **0.994**

Log[power gain]*10 = Antenna Gain: **-0.026 dBd**
 Calculated Antenna Input Power: **2.012 kW**

System Loss Info:

<u>Description</u>	<u>Component Make/Model</u>	<u>Length</u>	<u>Loss</u>
Connector	EIA 7/8" Male		-0.050 dBd
Connector	Andrew HJ5-50 (7/8" Heliax) (0.384 dB/100 ft)	205 ft	-0.787 dBd
Connector	EIA 7/8" Male		-0.050 dBd
EIA Reducer	Generic 7/8" - 1-5/8"		-0.100 dBd
Matcher	Shively 99952-G502	3 ft	-0.010 dBd
EIA Elbow	Myat 101-021		-0.010 dBd
Connector	Andrew H5FB-014-S		-0.050 dBd
Jumper to Matcher	Andrew HJ5-50 (7/8" Heliax) (0.384 dB/100 ft)	12 ft	-0.046 dBd
Connector	Andrew H5FB-014-S		-0.050 dBd
Combiner	Shively 2630		-0.486 dBd
Connector	Andrew H5FB-010-S		-0.050 dBd
Jumper to Combiner	Andrew HJ5-50 (7/8" Heliax) (0.362 dB/100 ft)	10 ft	-0.036 dBd
Connector	Andrew H5FB-014-S		-0.050 dBd
EIA Elbow	Myat 101-021		-0.010 dBd

TOTAL SYSTEM GAIN/LOSS: **-1.811 dBd**
 $1 / [10^{(-1.811/10)}] =$ CALCULATED TRANSMITTER POWER OUTPUT: **3.035 kW**

Munn-Reese

Broadcast Engineering Consultants

Coldwater, MI 49036