

TPO Calculation Summary

Main Antenna Operation

Call letters: K273DJ
City of License: West Fargo, ND
Frequency: 273 (102.5 MHz)
File No: BMPFT-20180418ACA
Facility ID: 202255
Applicant: University of Northwestern-St Paul

Operating Effective Radiated Power (ERP): 0.250 kW

Antenna Make: Jampro
Antenna Model: JMVP-2R
No of Elements: 2
Antenna COR AGL: 58 meters AGL
Antenna COR AMSL: 334 meters AMSL
Power Gain: 2

$\text{Log}[\text{power gain}] * 10 = \text{Antenna Gain: } 3.010 \text{ dBd}$
Calculated Antenna Input Power: 0.125 kW

System Loss Info:

<u>Description</u>	<u>Component Make/Model</u>	<u>Length</u>	<u>Loss</u>
Type N End Connector	Generic (8@0.02 dB each)		-0.160 dBd
Main Feedline (Tower)	Andrew HJ7-50A (1-5/8" heliax)	(0.206 dB/100 ft)	179 ft
AM Isocoupler	ERI Model 404		-0.200 dBd
Main Feedline (Tower)	Andrew HJ7-50A (1-5/8" heliax)	(0.206 dB/100 ft)	45 ft
Gas Barrer	Andrew O1BN 1-5/8"		-0.050 dBd
Main Feedline (Ground 1)	Andrew HJ5-50(7/8" foam heliax)	(0.374 dB/100 ft)	22 ft
Jumper	Andrew FSJ4-50B (1/2" Superflex)	(1.051 dB/100 ft)	3 ft

TOTAL SYSTEM GAIN/LOSS: 2.03 dBd
 $1 / [10^{(2.03 \text{ dB}/10)} / \text{ERP}] = \text{CALCULATED TRANSMITTER POWER OUTPUT: } 0.157 \text{ kW}$

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