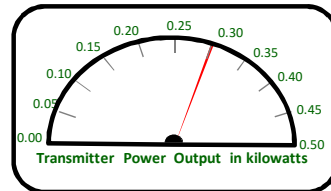
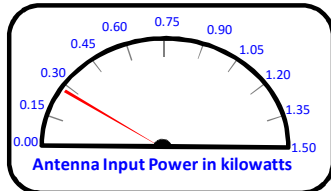


TPO Calculation Summary

Main Antenna Operation

Call letters: K231AR
City of License: Mitchell, SD
Frequency: CH231D (94.1 MHz)
File No: BLFT-20060524AAA (License Modification)
Facility ID: 139171
Applicant: University of North Western - St. Paul



Operating Effective Radiated Power (ERP): 0.250 kW

Antenna Make: Shively Labs
Antenna Model: 6812B-2
No of Elements: Two (2)
Antenna COR AGL: 40 meters AGL
Antenna COR AMSL: 440 meters AMSL
Max Input Power: 1.5 kW
Power Gain: 0.99

$\text{Log}[\text{power gain}] \times 10 = \text{Antenna Gain: } -0.044 \text{ dBd}$

Calculated Antenna Input Power: 0.253 kW
Transmitter Make/Model: Crown FM500
Transmitter Rated Power: 0.500 kW

System Loss Info:

Description	Component Make/Model	Length	Loss
Type N End Connector	Generic (1@0.02 dB each)		-0.020 dBd
Main Feedline (Upper Section)	Andrew LDF4-50A (1/2" Foam)	26 ft	-0.167 dBd
Type N End Coupler(s)	Generic (2@0.02 dB each)		-0.040 dBd
Main Feedline (Lower Section)	Andrew LDF5-50A (7/8" Foam)	135 ft	-0.475 dBd
Type N End Connector	Generic (1@0.02 dB each)		-0.020 dBd

TOTAL SYSTEM GAIN/LOSS: -0.766 dBd

$1 / [10^{(-0.766/10)}] = \text{CALCULATED TRANSMITTER POWER OUTPUT: } 0.298 \text{ kW}$