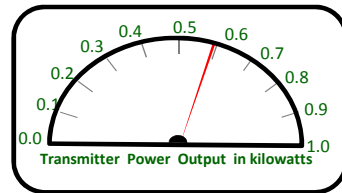
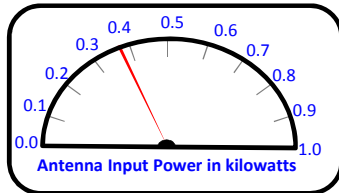


TPO Calculation Summary

Main Antenna Operation

Call letters: K299AL
City of License: Albert Lea, MN
Frequency: CH299D (107.7 MHz)
File No: BPFT-20140902ADJ
Facility ID: 22545
Applicant: University Of Northwestern-St. Paul



Operating Effective Radiated Power (ERP): 0.250 kW

Antenna Make: Nicom USA Inc.

Antenna Model: BKG88-2(0.5λ Spaced)

No of Elements: Two (2)

Antenna COR AGL: 69 meters AGL

Antenna COR AMSL: 460 meters AMSL

Max Input Power: 1.0 kW

Power Gain: 0.7

$\text{Log}[\text{power gain}] * 10 = \text{Antenna Gain: } -1.549 \text{ dB}$

Calculated Antenna Input Power: 0.357 kW

Transmitter Make/Model: Nautel VS1

Transmitter Rated Power: 1.0 kW

System Loss Info:

Description	Component Make/Model	Length	Loss
1/2 Inch End Connector(s)	Generic (2@0.02 dB each)		-0.040 dB
Interbay Antenna Leads	RG-213 (Foam) (5 feet x2 leads)	(2.000 dB/100 ft) 10 ft	-0.200 dB
1/2 Inch End Connector(s)	Generic (2@0.02 dB each)		-0.040 dB
Interbay Power Divide	Nicom Series BAC2N		-0.300 dB
1/2 Inch End Connector	Generic (1@0.02 dB each)		-0.020 dB
Main Antenna Feedline (Tower)	Andrew 1/2" LDF4-50A (Foam)	(0.687 dB/100 ft) 242 ft	-1.663 dB
1/2 Inch End Connector	Generic (1@0.02 dB each)		-0.020 dB

TOTAL SYSTEM GAIN/LOSS: -3.832 dB

$1 / [10^{(-3.832/10)}] = \text{CALCULATED TRANSMITTER POWER OUTPUT: } 0.604 \text{ kW}$