

# TPO Calculation Summary

## Main Antenna Operation

**Call letters:** KISM(FM)  
**City of License:** Bellingham, WA  
**Frequency:** CH225C - 92.9 MHz  
**File No:** Not Filed Yet  
**Facility ID:** 34469  
**Applicant:** Saga Broadcasting, LLC

**Operating Effective Radiated Power (ERP):** 50.000 kW

**Antenna Make:** Shively Labs, Inc.  
**Antenna Model:** 6810-6  
**No of Elements:** six (6)  
**Antenna COR AGL:** 103 meters AGL  
**Antenna COR AMSL:** 787 meters AMSL  
**Max Input Power:** 40.0 kW  
**Power Gain:** 3.28

$\text{Log}[\text{power gain}] * 10 = \text{Antenna Gain:}$  5.159 dB

**Calculated Antenna Input Power:** 15.244 kW

### System Loss Info:

<u>Description</u>	<u>Component Make/Model</u>	<u>Length</u>	<u>Loss</u>
Antenna Feedline (Tower Portion)	Andrew 3" HJ8-50B (Air) (0.139 dB/100 ft)	338 ft	-0.470 dB
Antenna Feedline (Ground Portion)	Andrew 3" HJ8-50B (Air) (0.139 dB/100 ft)	12 ft	-0.017 dB
Hardline Section(s) (Total)	Dielectric 3" Ridged (or equivalent) (0.096 dB/100 ft)	28 ft	-0.027 dB
Wattmeter Line Section	Coaxial Dynamics Part No. 88516D		-0.050 dB
Gas Block Fitting	Comscope (Andrew) part H8FB-302 (or equivalent)		-0.050 dB
automatic switch	Dielctric 3 1/8" DC 60000-300 Series		-0.100 dB
3 Inch End Connector(s)	Generic (10@0.01 dB each)		-0.100 dB
3 inch Elbow Connector(s)	Generic (4@0.01 dB each)		-0.040 dB

**TOTAL SYSTEM GAIN/LOSS:** 4.305 dB

$1 / [[10^{4.305/10}]/ERP]] = \text{CALCULATED TRANSMITTER POWER OUTPUT:}$  18.553 kW

**Munn-Reese, Inc.**

Broadcast Engineering Consultants

Coldwater, MI 49036