

TPO Calculation Summary

Main Antenna Operation

Call letters: WROJ-LP(FM)
City of License: St. Cloud, MN
Frequency: CH241D (96.1 MHz)
File No: BMPL-20150205ABP
Facility ID: 194306
Applicant: The Rock FM Communications, Inc.

Operating Effective Radiated Power (ERP): 0.100 kW

Antenna Make: Shively Labs
Antenna Model: 6812B-1
No of Elements: One (1)
Antenna COR AGL: 30 meters AGL
Antenna COR AMSL: 348 meters AMSL
Max Input Power: 1.0 kW
Power Gain: 0.46

$\text{Log}[\text{power gain}] * 10 = \text{Antenna Gain: } -3.372 \text{ dB}$

Calculated Antenna Input Power: 0.217 kW

Transmitter Make/Model: Nautel VS300

Transmitter Rated Power: 0.300 kW

System Loss Info:

<u>Description</u>	<u>Component Make/Model</u>	<u>Length</u>	<u>Loss</u>
7/8 Inch End Connector	Generic (1 @0.05 dB each)		-0.050 dB
Main Antenna Feedline (Tower)	Andrew 7/8" LDF5-50A (Foam) (0.356 dB/100 ft)	150 ft	-0.534 dB
7/8 Inch End Connector	Generic (1 @0.05 dB each)		-0.050 dB

TOTAL SYSTEM GAIN/LOSS: -4.006 dB

$1 / [10^{(-4.006/10)}] = \text{CALCULATED TRANSMITTER POWER OUTPUT: } 0.252 \text{ kW}$