

TPO Calculation Summary

Main Antenna Operation

Call letters: W235BR
City of License: Ithaca, NY
Frequency: CH235D (94.9 MHz)
File No: BPFT-20140428ABI
Facility ID: 144458
Applicant: Saga Communications of New England, LLC

Operating Effective Radiated Power (ERP): 0.125 kW

Antenna Make: Kathrein Inc., Scala Division
Antenna Model: CL-FM(SLANT-45)-4 (4-BAY, 1.0 SPACED)
No of Elements: Four (4)

Antenna COR AGL: 84 meters AGL

Antenna COR AMSL: 529 meters AMSL

Power Gain: 7.943 (12 dB - 3 dB)

$\text{Log}[\text{power gain}] * 10 = \text{Antenna Gain:}$ 9.000 dB

Calculated Antenna Input Power: 0.016 kW

System Loss Info:

<u>Description</u>	<u>Component Make/Model</u>	<u>Length</u>	<u>Loss</u>
1/2 Inch End Connector	Generic (4@0.02 dB each)		-0.080 dB
Antenna Bay Leads	RG-8 (Foam) (15ft x 4 jumpers) (1.900 dB/100 ft)	60 ft	-1.140 dB
1/2 Inch End Connector	Generic (4@0.02 dB each)		-0.080 dB
Power Divide (4-way)	Kathrein Scala PDH(x) Series		-0.500 dB
1/2 inch End Connector	Generic (1@0.02 dB each)		-0.020 dB
Main Antenna Feedline (tower)	Andrew Heliax 1/2" LDF4-50A (Foam) (0.643 dB/100 ft)	271 ft	-1.743 dB
Main Antenna Feedline (ground)	Andrew Heliax 1/2" LDF4-50A (Foam) (0.643 dB/100 ft)	5 ft	-0.032 dB
7/8 inch to 1/2 inch Coupler	Generic (1@0.02 dB each)		-0.020 dB
AM Isocoupler	Kintronics FMC1.5		-0.200 dB
1/2 inch to 7/8 inch Coupler	Generic (1@0.02 dB each)		-0.020 dB
Isocoupler to Diplexer Jumper	Andrew Heliax 1/2" LDF4-50A (Foam) (0.643 dB/100 ft)	23 ft	-0.148 dB
7/8 inch to 1/2 inch Coupler	Generic (1@0.02 dB each)		-0.020 dB
FM Multi-Frequency Triplexer	Microwave Filter Co. Model 18930-2 Triplexer		-1.500 dB
7/8 inch End Connector	Generic (1@0.02 dB each)		-0.020 dB
Diplexer to Transmitter Jumper	Eupen EC5-50A 7/8" EC5-50A (Foam) (0.310 dB/100 ft)	10 ft	-0.031 dB
7/8 inch End Connector	Generic (1@0.02 dB each)		-0.020 dB

TOTAL SYSTEM GAIN/LOSS: 3.426 dB

$1 / [10^{(3.426/10)} / \text{ERP}] = \text{CALCULATED TRANSMITTER POWER OUTPUT:}$ 0.057 kW