

TPO Calculation Summary

Main Antenna Operation

Call letters: W291CY.C
City of License: Mobile, AL
Frequency: CH291D (106.1 MHz)
File No: BPFT-20160405AAY
Facility ID: 138271
Applicant: Alabama Radio Corporation

Operating Effective Radiated Power (ERP): 0.250 kW

Antenna Make: Nicom USA, Inc. (NIC)
Antenna Model: BKG77/3L(0.5spaced)
No of Elements: Three (3)
Antenna COR AGL: 145 meters AGL
Antenna COR AMSL: 155 meters AMSL
Max Input Power: 1.5 kW
Power Gain: 1.012

$\text{Log}[\text{power gain}] * 10 = \text{Antenna Gain:}$ 0.052 dBd

Calculated Antenna Input Power: 0.247 kW

Transmitter Make/Model: Harris FAX1

Transmitter Rated Power: 1.000 kW

System Loss Info:

<u>Description</u>	<u>Component Make/Model</u>	<u>Length</u>	<u>Loss</u>
7/8 Inch End Connector(s)	Generic (3@0.02 dB each)		-0.060 dBd
Interbay Antenna Leads	RG-213(foam) (5 feet x 3 leads) (2.000 dB/100 ft)	15 ft	-0.300 dBd
7/8 Inch End Connector(s)	Generic (3@0.02 dB each)		-0.060 dBd
Interbay Power Divide	Nicom Series BAC3L		-0.300 dBd
7/8 Inch End Connector	Generic (1@0.02 dB each)		-0.020 dBd
Main Feedline	Andrew AVA5-50 (7/8" virtual air) (0.349 dB/100 ft)	520 ft	-1.815 dBd
7/8 Inch End Connector	Generic (1@0.02 dB each)		-0.020 dBd
Combiner	Shively Model 2930-2/3 Branched Combiner		-1.150 dBd
7/8 Inch to 1/2 Inch Coupler	Generic (1@0.02 dB each)		-0.020 dBd
Jumper to Transmitter	Andrew LDF4-50A (1/2" (foam) (0.681 dB/100 ft)	30 ft	-0.204 dBd
1/2 Inch End Connector	Generic (1@0.02 dB each)		-0.020 dBd

TOTAL SYSTEM GAIN/LOSS: -3.92 dBd

$1 / [10^{[-3.92 \text{ dBd}]/10}] = \text{CALCULATED TRANSMITTER POWER OUTPUT:}$ 0.616 kW