

RF System Calculations for KJXK 102.7 MHz - San Antonio

Transmitter:

Transmitter Power Output (TPO) 23.063 kW

Antenna:

Type of Antenna 16-bay - Center Fed - Half Wave
Length of Antenna 71.86 ft
Effective Radiated Power (ERP) 100 kW
Height of Top Bay (AGL) 72 ft
Center of Radiation (AGL) 36.07 ft
Antenna Power Gain (H & V) 4.927
Antenna Field Gain (H & V) 2.1909
Antenna Input Power 20.296 kW
Field Intensity (1kW @ 1 mile) 301.466 mV/m
1st Null (no beam tilt) 7.2 Degrees 0.053 Miles
2nd Null (no beam tilt) 14.5 Degrees 0.026 Miles

Transmission Line:

Type of Line 3" Air Andrew #HJ8-50B
Transmission line average power rating is 40.7 kW
Total Length of Line 165.07 ft
Length of Line on Tower 36.07 ft
Distance to Combiner 101 ft
Line Loss at 102.7 MHz..... 0.1428 db/100 ft.
Other Losses246 db
Power Loss in System 2.230 kW
System Efficiency 90.329 %

Provided by Greg Shapiro - RF Engineer - RF Services Inc.

Monday, August 06,2007 at 01:22pm