

# Transmitter Power Output Calculation K221GL (formerly K285CW)

Channel 221D – 92.1 MHz  
0.120 kW ERP – 2174 m HAAT  
Prescott, Arizona  
January 2017

Given:

Effective Radiated Power: 0.120 kW  
Antenna Gain (Multiplier): 5.0  
Transmission Line Efficiency: 76.7%  
Cavity Filter Efficiency: 83.2% (0.8 dB Loss)

Calculation:

$0.120 \text{ kW Effective Radiated Power} \div 5.0 \text{ Antenna Gain} = 0.024 \text{ kW Antenna Input Power}$

$0.024 \text{ kW Antenna Input Power} \div 0.767 \text{ Transmission Line Efficiency} \div 0.832 \text{ Cavity Filter Efficiency} = 0.0376 \text{ kW Transmitter Power Output}^*$

\* 0.0376 kW Transmitter Power Output rounds to 0.038 kW per §73.212(a).