

Transmitter Power Output Calculation

Translator W242DH

Channel 242D – 96.3 MHz

0.250 kW ERP – 609 m COR AMSL

Crossville, Tennessee

December 2022

Given:

Effective Radiated Power: 0.250 kW

Antenna Gain (Multiplier): 0.9

Transmission Line Efficiency: 82.35%

Connector Efficiency: 96.49%

Isocoupler Efficiency: 95.50%

Combiner Efficiency: 82.04%

Calculation:

0.250 kW Effective Radiated Power ÷ 0.9 Antenna Gain = 0.27778 kW Antenna Input Power

0.27778 kW Antenna Input Power ÷ 0.8235 Transmission Line Efficiency ÷ 0.9649 Connector Efficiency ÷ 0.9550 Isocoupler Efficiency ÷ 0.8204 Combiner Efficiency = 0.446 kW Transmitter Power Output*

* 0.446 kW rounds to 0.450 kW per §73.212(a)