

KTYN(FM) Thayne, WY

Transmitter Power Output Calculations

TPO Calculations:

$$\text{TPO} = \frac{\text{Effective Radiated Power}}{(\text{Antenna Power Gain} * \text{Feed System Efficiency})}$$

Antenna Power Gain:

Antenna: Nicom BKG77/2
Polarization: Circular
Power Gain: 0.9 x

Feed System Efficiency:

Feed Line to Antenna:
Type: Andrew LDF5-50
Length: 70 ft
Insertion Loss: 0.29 dB

Filter/Combiner:
Type: Nicom FPB800
Insertion Loss: 0.5 dB

Total Losses = 0.79 dB
Feed System Efficiency = 83.28 %

$$\frac{0.38 \text{ kW}}{(0.9 * 83.28\%)} = \underline{\underline{\mathbf{0.51 \text{ kW TPO}}}}$$