

KPVO(FM), Fountain Green, UTT  
Link Budget Analysis  
(Proof that the Proposed TPO Produces the Necessary ERP)

$$\text{ERP (dBk)} = \text{TPO (dBk)} + \text{Antenna Gain (dBd)} - \text{Line Loss (dB)}$$

$$\text{ERP (kW)} = 2.3 \text{ kW}$$

$$\text{ERP (dBk)} = 10 * \log(2.3) = 3.62 \text{ dBk}$$

$$\begin{aligned}\text{Antenna Gain} &= 1.50 \text{ dBd} \\ \text{Line Loss}/100' &= 0.364 \text{ dB} \\ \text{Line Length} &= 70 \text{ feet} \\ \text{Total Line Loss} &= 0.364 * 0.7 = 0.25 \text{ dB}\end{aligned}$$

$$\begin{aligned}\text{TPO (dBk)} &= \text{ERP (dBk)} + \text{Line Loss (dB)} - \text{Antenna Gain (dBd)} \\ &= 3.62 + 0.25 - 1.50 \\ &= 2.37 \text{ dBk}\end{aligned}$$

$$\text{ERP (kW)} = 10^{\text{ERP (dBk)} / 10}$$

$$= 10^{2.37/10}$$

$$= \underline{\underline{1.73 \text{ kW}}}$$