

The TPO of 2.34 kW was calculated as follows:

42.7 meters of Andrew HJ7-50A Helix was employed. According to the manufacturer, this line has 0.640 dB loss per 100 meters, giving a total line loss of 0.273 dB for a calculated efficiency of 93.9%.

Based on the manufacturer's specifications, the maximum power gain of the installed ERI-2E-DA-HW 2-bay antenna is 1.137. Therefore, this antenna requires an input of 2.199 kW to produce 2.5 kW ERP. The transmitter output power is calculated below.

$$\text{TPO} = 2.5 \text{ kW [ERP]} / (0.939 \text{ [Line efficiency]} * 1.137 \text{ [Antenna gain]}) = 2.34 \text{ kW}$$

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