

DETERMINATION OF TRANSMITTER POWER OUTPUT

EFFECTIVE RADIATED POWER: 2.3 kW

ANTENNA INPUT POWER TO ACHIEVE EFFECTIVE RADIATED POWER: 1.746 kW (per manufacturer of antenna, Electronics Research, Inc.)(Antenna Power Gain of 1.317)

TRANSMISSION LINE: Dielectric 4-1/16"

TRANSMISSION LINE LENGTH: 1190 Feet

TRANSMISSION LINE EFFICIENCY: 82.13% (per published specifications of Dielectric for this line)

TRANSMITTER POWER OUTPUT TO ACHIEVE EFFECTIVE RADIATED POWER: 2.126 kW

$TPO = \text{ANTENNA INPUT POWER} / \text{TX LINE EFFICIENCY}$

$TPO = 1.746 \text{ kW} / 0.8213$

$TPO = 2.126 \text{ kW}$

$ERP = TPO * \text{TX LINE EFFICIENCY} * \text{ANTENNA GAIN}$

$ERP = 2.126 \text{ kW} * 0.8213 * 1.317$

$ERP = 2.3 \text{ kW}$