

## EXHIBIT 7

ERP / TPO calculations for: WCRR 88.9fm- Manistique, MI

**FM System Calculator**


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User Input

<input type="text" value="24.5"/>	Eff Radiated Pwr (kW)	<input checked="" type="radio"/> Full Wave <input type="radio"/> Half Wave
<input type="text" value="88.9"/>	MHz Frequency	
<input type="text" value="597"/>	Height of Top Bay (ft)	<input checked="" type="radio"/> Center Feed <input type="radio"/> End feed
<input type="text" value="12-bay"/>	Antenna	
<input type="text" value=""/>	dB Additional Losses	<input checked="" type="radio"/> feet <input type="radio"/> meters
<input type="text" value="35"/>	Distance to Tower (ft)	
<input #ldf7-50a"="" andrew="" foam="" type="text" value="1-5/8"/>	Coax	<b>Transmission line average power rating is 14.7 kW</b>

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Calculated Results

Antenna Power Gain	<input type="text" value="6.8781"/>		<input type="text" value="536.12"/>	Ctr. of Radiation AGL (ft)
Antenna Field Gain	<input type="text" value="2.6226"/>		<input type="text" value="75.759"/>	% Line Efficiency
kW Antenna Input Power	<input type="text" value="3.562"/>		<input type="text" value=".2111"/>	dB Attenuation / 100 ft
mV/m Ant. FI @ 1 mi./1kW	<input type="text" value="360.872"/>		<input type="text" value="1.140"/>	kW Power Loss in Coax
Length of Antenna (ft)	<input type="text" value="121.75"/>		<input type="text" value="571.12"/>	Total Length of Coax (ft)

**Transmitter Power Output :**  **Kilowatts**

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User Data

Print

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*The recommended transmitter for this application:  
Continental 815C, 5 kW Solid-State*