

# Electronics Workshop - August 25, 2016

## Time & Location:

7:00 PM

Fire District 6 Training Room, 2123 Jackson Highway, Chehalis, WA

## Topics:

1. Repairing a Cushcraft R7 vertical antenna
2. FM deviation measurement
3. Designing an attenuator
4. Repairing an oscilloscope

## Bring:

Calculator

## Notes:

1. Cushcraft R7:
  - a. <http://www.cushcraftamateur.com/pdf/r7.pdf>
  - b. <http://www.qsl.net/ei7ba/Troubleshooting%20Traps.htm>
  - c. [http://f1chf.free.fr/F5DQK/4\\_Paraboles\\_antennas\\_dishes/Cushcraft%20R7%20reparation\\_eng.pdf](http://f1chf.free.fr/F5DQK/4_Paraboles_antennas_dishes/Cushcraft%20R7%20reparation_eng.pdf)
  - d. [http://www.qsl.net/ei7ba/r7\\_vertical.htm](http://www.qsl.net/ei7ba/r7_vertical.htm)
2. FM deviation:
  - a. <http://www.febo.com/packet/layer-one/transmit.html>
  - b. <http://www.repeater-builder.com/uniden/mr8100/discrim.txt>
  - c. <http://www.repeater-builder.com/projects/dev-meter/deviation-meter.html>
  - d. [https://archive.org/stream/73-magazine-1993-08/08\\_August\\_1993#page/n23/mode/1up](https://archive.org/stream/73-magazine-1993-08/08_August_1993#page/n23/mode/1up)
3. Attenuator:
  - a. <http://chemandy.com/calculators/matching-pi-attenuator-calculator.htm>
  - b. <http://chemandy.com/calculators/matching-t-attenuator-calculator.htm>
4. Conar 255 Oscilloscope:
  - a. <http://bama.edebris.com/download/conar/255/255.pdf>

## Reference:

<http://www.allaboutcircuits.com/textbook/direct-current/chpt-5/simple-parallel-circuits/>

For parallel resistors:

$$R_{total} = \frac{1}{\frac{1}{R_1} + \frac{1}{R_2} + \dots}$$