

One Coil Loop

Hams often use One Turn Loop (Figure 1) in their homebrewing. Such Loop may be used in a transmitting/receiving HF- VHF Magnetic Loop Antenna (Figure 2), in a simple VHF oscillator working on transmitting without antenna (Figure 3), in receiving VHF antenna for simple VHF receiver (Figure 4).

The knowledge of inductance of the One Turn Loop allows to design these devices easy. You can find the inductance of a round One Turn Loop from the diagrams given in Figure 5. When you know the inductance of the loop you may find parameters of the resonator tank (loop plus capacitor).

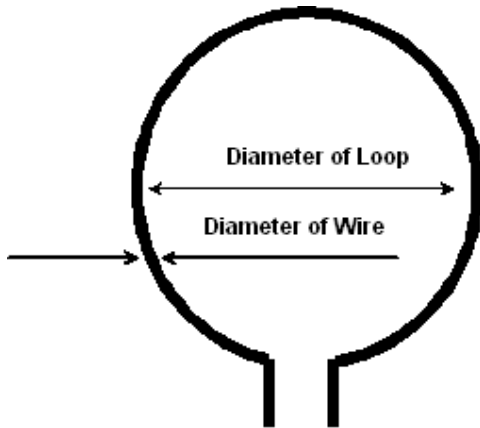


Figure 1
One Turn Loop

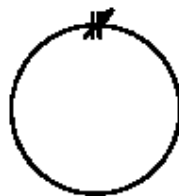


Figure 2
Magnetic Loop

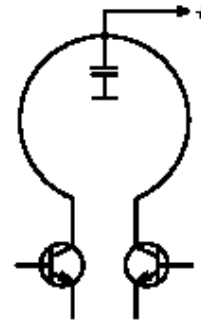


Figure 3
Simple VHF oscillator

You may use the diagram given on Figure 5 for calculation of the Insulation RF Choke (Figure 6). The inductance of that RF Choke approximately is a sum of the inductance of turns forming the choke. Example: One Turn Loop has inductance 1 μ Hn. Coil formed by five such turns has inductance 5 μ Hn.

Credit Line:

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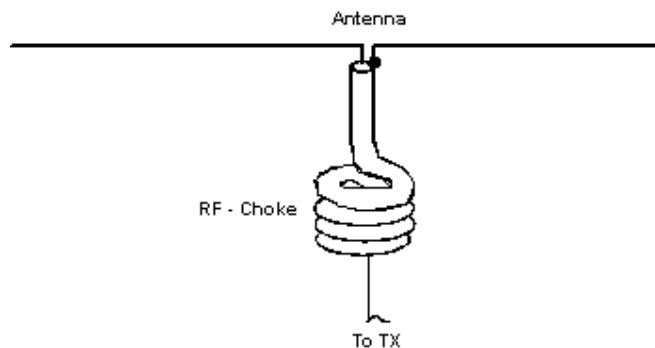


Figure 6
Insulation RF Choke

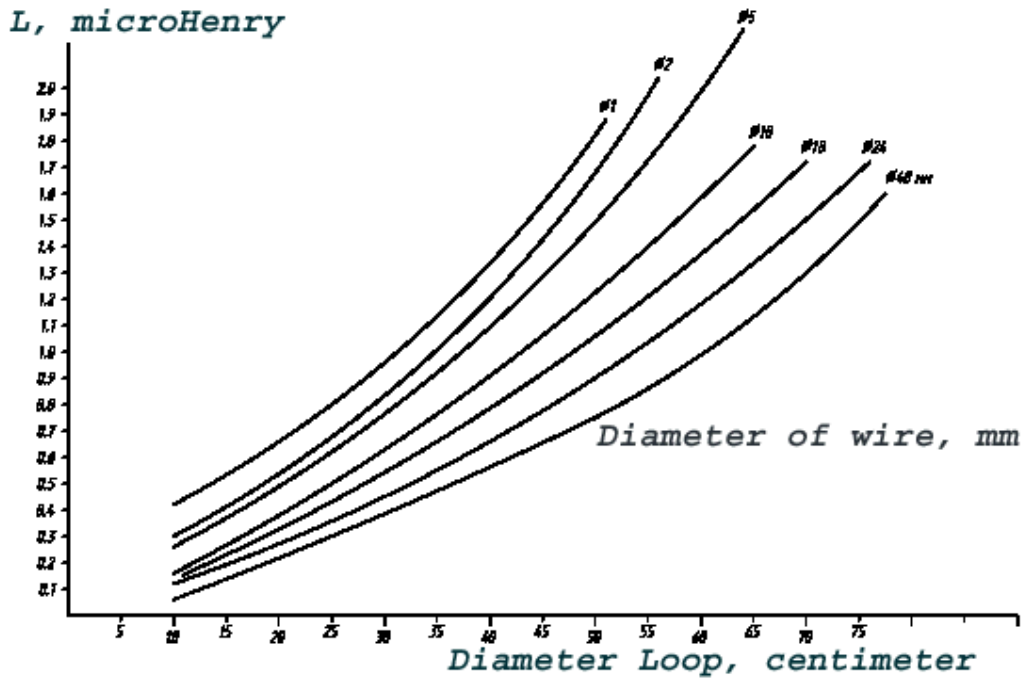


Figure 5
Inductance of One Turn Loop Vs Diameter

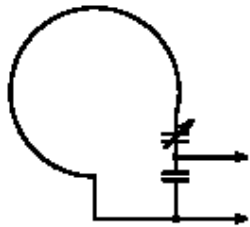


Figure 4
Receiving VHF antenna

Antennas for Radio Amateurs: by Igor Grigorov, RK3ZK

In Russian

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