Technical Bulletin 94

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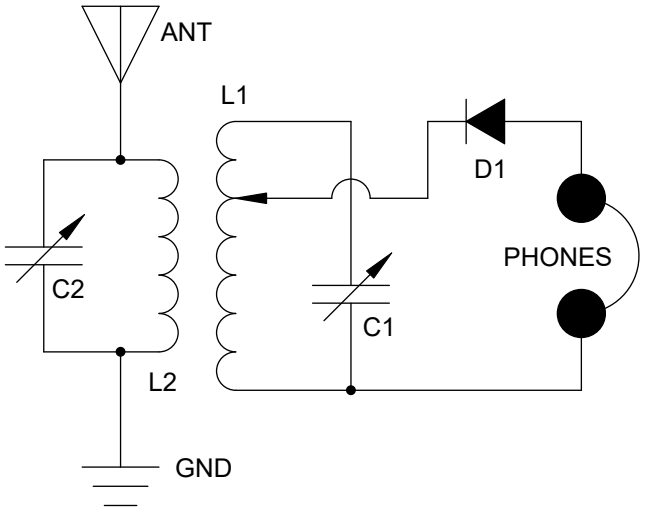
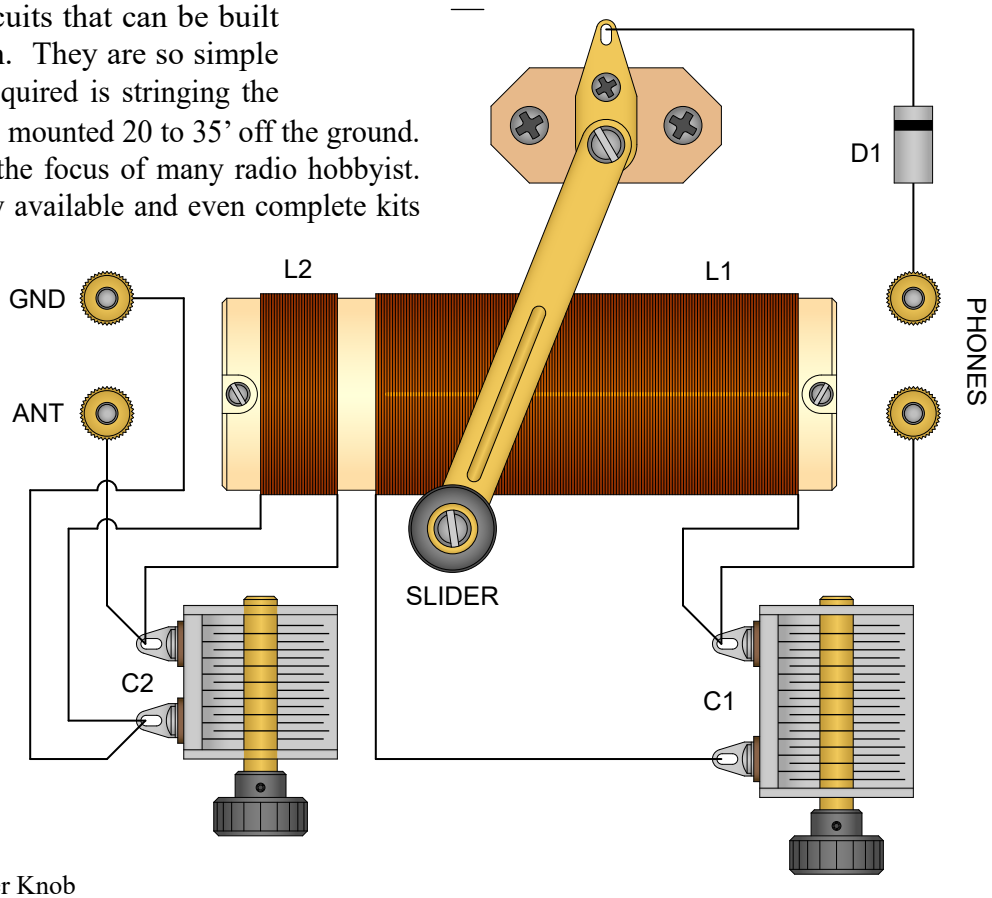
Crystal Radio Set

by Brian S. Elliott



The first genuinely "high tech" appliance to find its way into the homes of the world was the crystal radio set. Starting in the early 1900s, radio broadcasting stations started to populate the world. Crystal radios were the devices the average person used to receive these signals. While there were a number of commercially made units, many were home built like the one in the illustration below. These are very simple circuits that can be built on the kitchen table in a afternoon. They are so simple that the single most difficult task required is stringing the antenna. They require ~100' of wire, mounted 20 to 35' off the ground. Even today crystal radios represent the focus of many radio hobbyist. All of the necessary parts are readily available and even complete kits from a number of sources.

These simple little devices can be configured in a wide variety of different circuits. The various circuit designs generally provide improved performance over the basic crystal radio. The circuit shown here is one of those "improved" patterns. The basic design can be configured to receive AM, FM and short wave signals. Hobbyists use these receivers to listen in on all sorts of radio transmissions including commercial, municipal, police, military, air, and marine traffic.



C1, 500 Pf Variable Capacitor
C2, 300 Pf Variable Capacitor
D1, 1N34A Diode
L1, 150 Turns, 28 AWG
L2, 35 Turns, 28 AWG
2" OD Coil Form
Binding Post, 4 Each
1/4" Knob, 2 Each
3/8" x 1/16" copper Bar x 10"
Slider Knob
#6 x 1/2" Wood Screw, 8 Each
#8 x 2-1/2" Wood Screw, 2 Each
5/8" x 6' Bronze Ground Rod
1/8" x 7 Galvanized Antenna Cable x 120'
Antenna Insulators, 2 Each
High Impedance Head Phones
or: High Impedance
Ear Piece

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