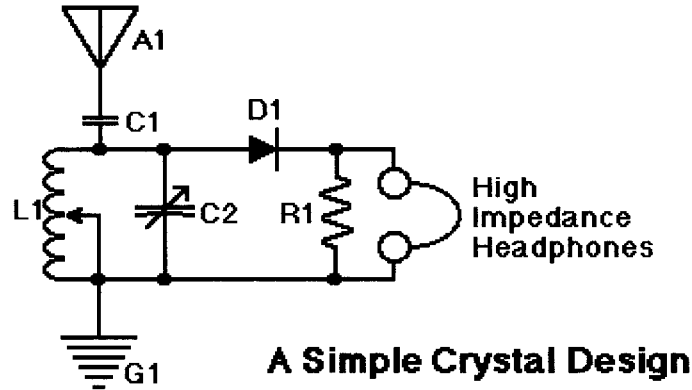


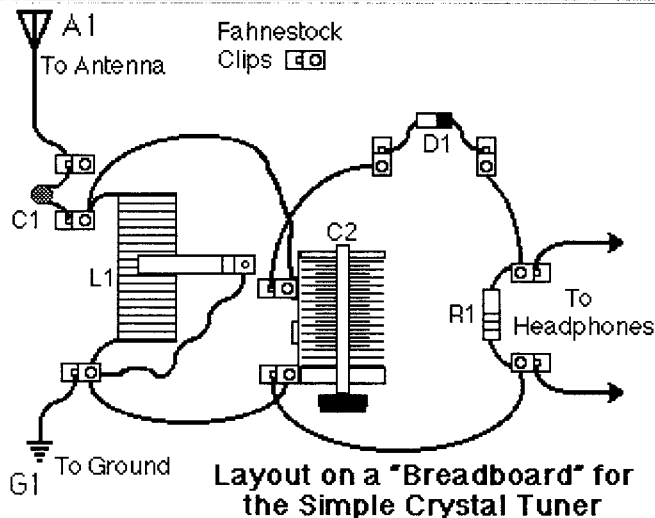
A Simple Crystal Radio Set

Whether you are a beginner or a seasoned expert, you would probably agree that there is nothing quite like using this simple design to make a crystal radio and enjoying it, listening to stations both near and far. Add to this the "something for nothing" advantage of not having to power this set with batteries or AC line and you can see why this simple design will be used and enjoyed for a long time to come. Almost like magic... Let's build one!



Components:

- A1 - 50-100 foot longwire antenna
- C1 - 50 pf ceramic capacitor OSE p/n CD-5
- C2 - 365 pf variable capacitor OSE p/n BC14400
- D1 - 1N34A diode OSE p/n 1N34A
- G1 - Ground (see instructions below)
- L1 - 100 turns of #20 AWG enamel coated copper wire OSE p/n MW20, adjustable tap (see instructions below)
- R1 - a 100k ohm resistor OSE p/n RQ100K
- Crystal Earphones OSE p/n CE748
- Fahnestock clips OSE p/n 2090



Looking at the diagram above, one can see how easily the crystal set can be laid out on a breadboard setup.

- **A1** - this is the antenna. In this case it is a "random length" longwire antenna, usually about 50-100 feet, but in some areas a shorter length will work. In general (especially on the AM broadcast band) the longer the better, but 100 feet should work quite well. A safety note on setting up an antenna - Never, never, NEVER string up an antenna or any of its components where it can possibly come in contact with power lines! If it falls on a power line, the results can be FATAL!!!
- **C1** - a 50 pf (picofarad) ceramic capacitor. This allows the signal to reach the receiver, but will stop any DC (direct current) charge.
- **C2** - 365 pf variable capacitor, or your tuning capacitor. The base is attached to the ground end of the coil and the tab sticking out of the side is the connection toward the antenna.
- **D1** - a 1N34A diode - this is the "detector" part of your radio.
- **G1** - This is your ground, in rough terms, creates a counterpoise for your antenna. Depending on your situation, you can use a metal cold water pipe or a metal rod driven into the ground (usually 8 feet, but I have gotten away with a shorter one). Do NOT use a pipe that may be attached to any gas appliance, which includes a hot water pipe!
- **L1** - The tuning ground coil, 100 turns of #20 AWG enamel copper wire on a length of paper towel roll (It works out to about 4 inches). The ground is attached to one end as well as the middle, which can be made by scraping off the top so that the metal wire is exposed and using a slider contact (adjustable tap), or if you are adept at making taps, place the taps every 10 turns or so. It is variable by moving the slider or the connection at the taps up and down, shorting out the unused portion of the coil and changing its value. Using double-stick tape helps the coil from slipping when winding it and when it's in use.
- **R1** - a 100k (kilo-ohm, a value of resistance) resistor. This helps raise the impedance of the headphones somewhat. You can get away without using it, but it does help.
- **High impedance headphones** - The best one to use is a set of 2000K ohm impedance headphones, but a cheaper alternative is a 1000k crystal earpiece.
- **Fahnestock clips** - Simple spring clips that can be screwed into a base such as wood and allow one or more wires to be attached together.