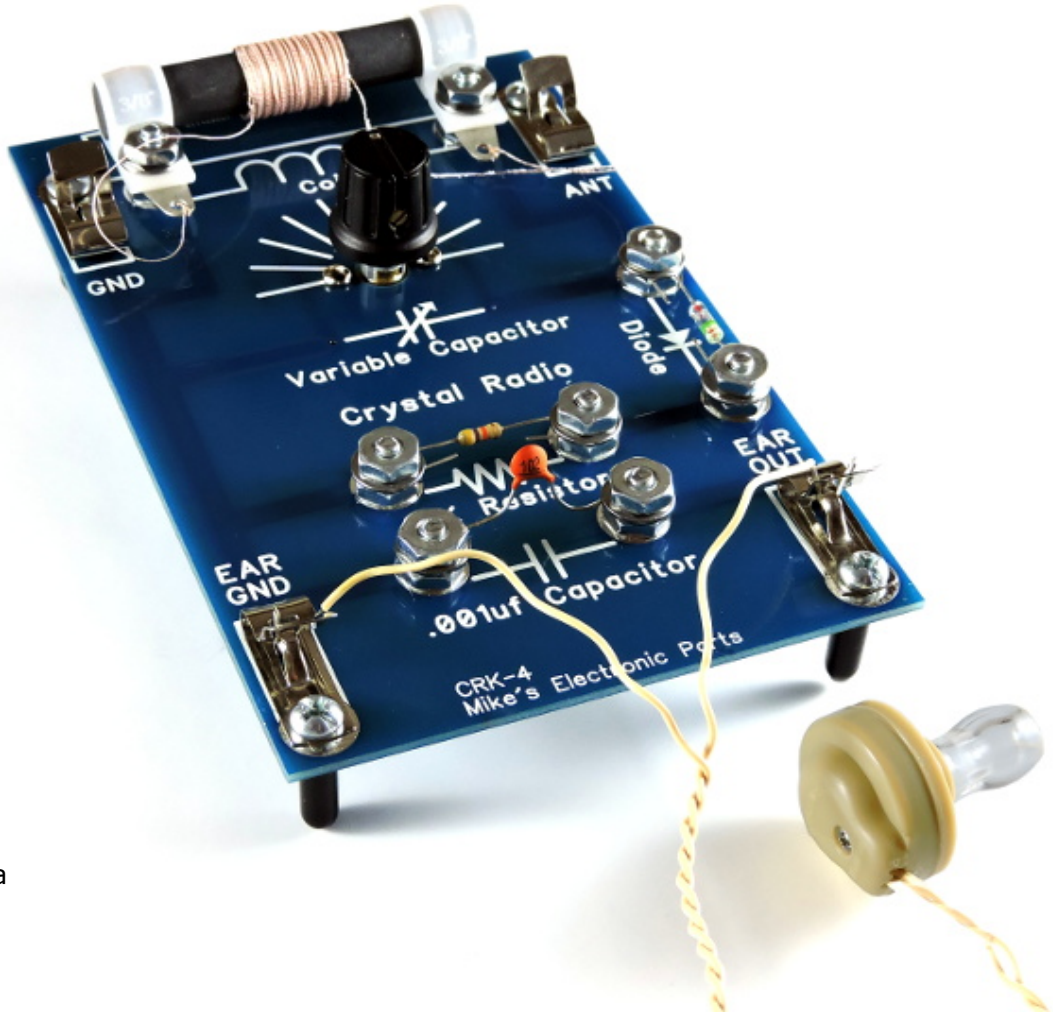
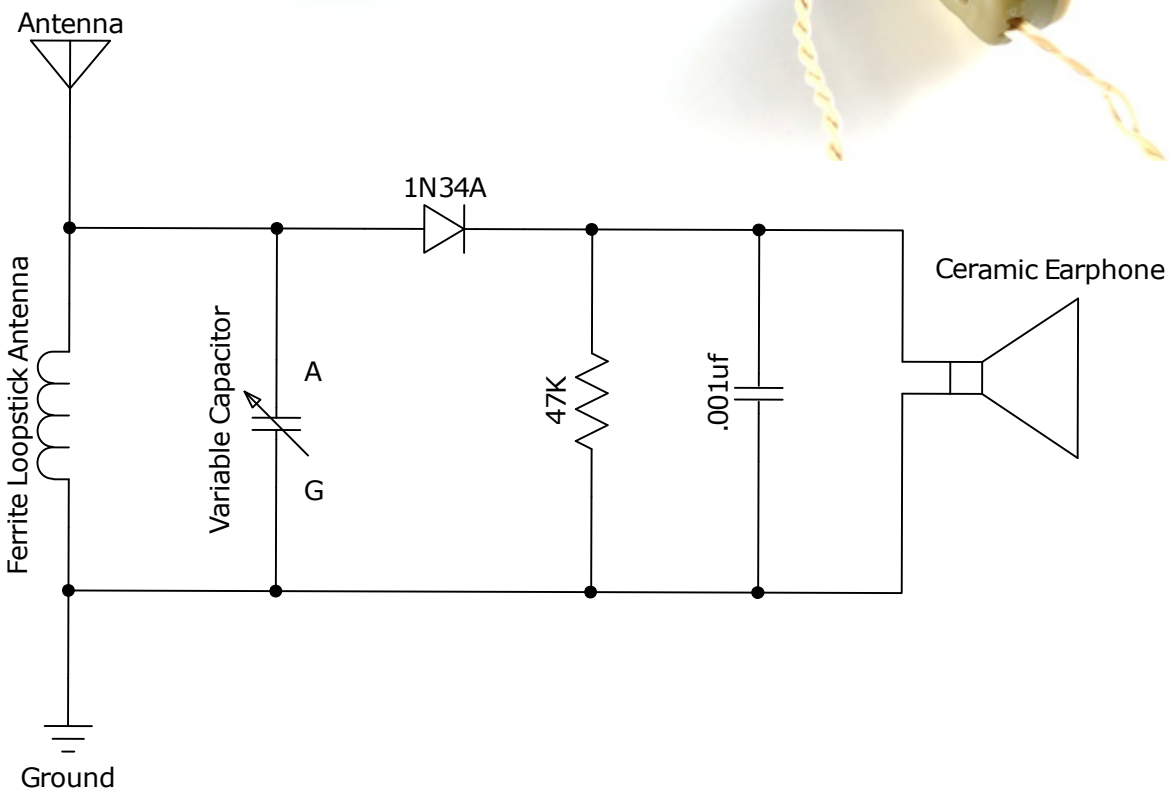
Crystal Radio Kit 4

Mike's Electronic Parts, LLC





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Parts List

1 - Circuit Board
  1 - Variable Capacitor Pre-soldered To Circuit Board
1 - Ferrite Loopstick Antenna
  2 - Solder Lugs Pre-soldered To Ferrite Loopstick Antenna
1 - 1N34A Germanium Diode
1 - .001uf Capacitor
1 - 47K Resistor
1 - Ceramic Earphone
4 - Fahnestock Clips
1 - Knob with shaft and screw
2 - Coil Clamps
6 - 3/8" #6 Screws
2- 1/2" #6 Screws
4 - 3/4" #6 Screws
20 - #6 Nuts
8 - #6 Washers
4 - Rubber Feet
1 - ~20 feet antenna wire (color may vary)
1 - ~ 5 feet ground wire (color may vary)

Tools Required

Philips Screwdriver
Small (Jewelers) Screwdriver
5/16" Wrench

Circuit Board


Variable Capacitor


Knob with shaft and screw


Ceramic Earphone


Antenna Wire


Ground Wire


Ferrite Loopstick Antenna


1N34A Germanium Diode


47K Resistor

.001uf Capacitor


Fahnestock Clip


Coil Clamp


Rubber Foot


3/8" #6 Screw


1/2" #6 Screw


3/4" #6 Screw


#6 Washer


#6 Nut

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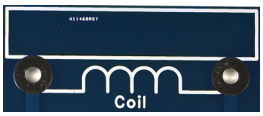
Crystal Radio Kit 4 is a great way to get started in electronics and radio building. This is a fun and simple project for both beginners and expert builders alike. Everything needed to build a fully functional radio, including an antenna and ground wire, is included in the kit. Easy to assemble with no soldering required. Crystal Radio Kit 4 is a great project to build with your child or grandchild, boy scout groups and schools.

The kit contains small parts that may be a choking hazard. Adult supervision is always advised while building the radio kit.

Assembly

1. Locate and familiarize yourself with all the parts in the parts list.
2. Assemble the legs.
   Items used: 4 - 3/4" #6 Screws, 4 #6 Nuts, 4 - Fahnestock Clips, 4 - Rubber Feet.
   Insert a 3/4" #6 screw through a Fahnestock Clip. Insert the screw with fahnestock clip through the circuit board. Attach a #6 nut from the bottom side of the circuit board. Snug the nut, do not over tighten. Push a rubber foot over the bottom of the screw. Lightly turn the rubber foot clockwise to ensure it is fully pushed into the screw.
   Repeat for all four legs.

3. Assemble the coil screws.
   Items used: 2 - 1/2" #6 Screws, 2 #6 Nuts.
   Locate the Coil location on the circuit board. Insert a 1/2" screw through the circuit board from the bottom in the hole to the left of the coil schematic symbol. Use a #6 nut from the top to fasten the screw to the circuit board.
   Repeat for the hole to the right side of the coil schematic symbol.



4. Assemble the posts.
   Items used: 6 - 3/8" #6 Screws, 6 #6 Nuts.
   Push a 3/8" #6 screw through the circuit board from the bottom. Use a #6 nut from the top to fasten the screw to the circuit board.
   Repeat for the remaining holes in the circuit board.

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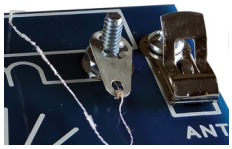
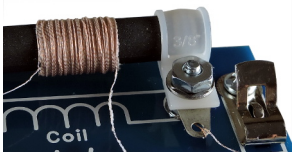
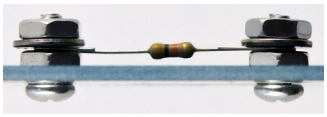
Assembly Continued

5. Assemble the coil.
   Items used: 1 - Ferrite Loopstick Antenna, 2 - Coil Clamps, 2 - #6 Washers, 2 - #6 Nuts.
   Locate the Coil location on the circuit board. Place the solder lugs over the screws at the end of the Coil symbol. Slide a coil clamp over each end of the ferrite rod. Place the coil clamp over the solder lug and secure with a #6 washer and #6 nut at each end.
   Double check that the coil is between the coil clamps and that the wires are not being pinched by the coil clamp.



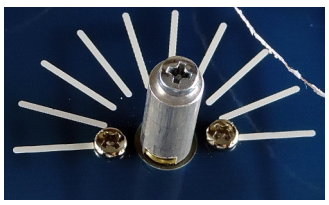


6. Assemble the 47K resistor
   Items used: 1 - 47K Resistor, 2 - #6 Washers, 2 - #6 Nuts.
   Locate the 47K Resistor location on the circuit board. Place the resistor across the nuts. Bend each end of the wire around the screw. Place a #6 washer and #6 nut on top of the wire. Tighten the nut to secure the resistor.



7. Assemble the .001uf Capacitor and 1N34A as described in Step 6 above.

8. Assemble the Knob.
   Attach the Knob shaft using the knob shaft screw to the variable capacitor shaft on the top side of the circuit board. Tighten the shaft screw. Turn the knob shaft to the full left position. Loosen the set screw in the side of the knob. Slide the knob over the knob shaft. Align the dot on the top of the knob with the far left dial markings on the circuit board. Tighten the set screw. The dot on the knob should point to the circuit board markings from full left to full right of the knob rotation.

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Assembly Continued

9. Attach the earphone.
   Items used: 1 - Ceramic Earphone.
   Locate the Fahnestock clips marked EAR. Push down on the fahnestock clip. Slide the end of the earphone wire through the opening. Release the fahnestock clip. Note: Do not clip the wire by the plactic coating. The bare metal portion of the wire must be clamped by the fahnestock clip.

Antenna

The bare end of the wire connects to the fahnestock clip marked ANT. The antenna wire should be placed as high as feasible. Run the antenna horizontal to the ground in as straight a line as possible. If there is not enough space to run the antenna in a straight line, the wire can be placed in an arc or loop shape as well. Experiment with the antenna placement and shape to achieve the best results.

Do not use the antenna outdoors during bad weather.

Ground

The use of a ground is optional. There are many options for connecting a ground. You can just lay the ground wire along the floor in the opposite direction from the antenna. You can connect the end of the ground wire to a metal object, like a metal desk. You can also connect the end of the ground wire to a physical earth ground if you have access to one. Some metal plumbing in a home may be physically earth grounded for example.

Congratulations! Your Crystal Radio is ready to use.

Use the tuning knob to locate local radio stations. Keep in mind that the crystal radio will only receive strong stations. Unlike a traditional battery powered radio, the power to drive the sound you hear is from the signal the antenna is able to pick up. Experiment moving the antenna to different locations to increase stations and/or volume.

If you have any questions at this stage, please refer to the photo on page 1 and double check any directions and photos applicable.