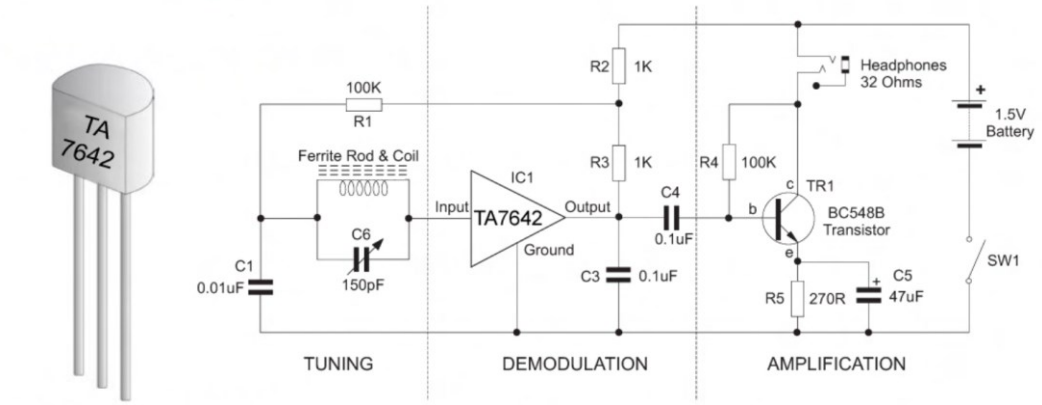
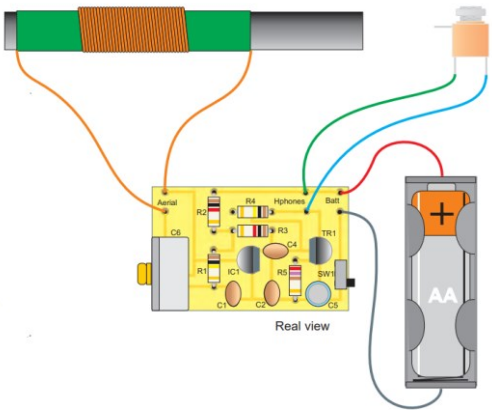
Radio

Circuit Construction

The circuit can be divided into 3 sections. The first section comprising the ferrite rod and the variable capacitor is for tuning the radio to the desired station frequency. The TA7642 removes the audio signal from the transmitting carrier signal. The last section based on the BC548B transistor is to amplify the audio signal so that it can be heard through the headphones.





Equipment / Components Needed

- Soldering equipment set
- Circuit board
- Components - IC TA7642, transistor BC548B, 150pF variable tuning capacitor, ferrite rod, 2.5m of 0.315mm enamelled copper wire, two 100K resistors (brown, black, yellow), two 1K resistors (brown, black, red), one 270R resistor (red, violet, brown), ultra-miniature slide switch, two 100nF capacitors, one 10nF capacitor, one 47uF capacitor, headphone socket, AA battery holder.

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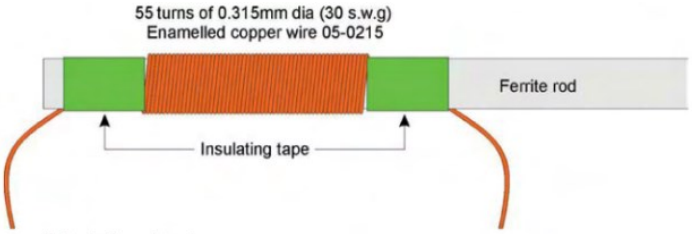
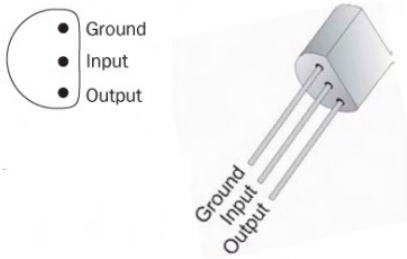
Procedure for Construction

1. Start building your radio by winding the coil. The coil needs approximately 55 turns of 0.315mm diameter enamelled copper wire on a 100mm long ferrite rod. The windings should measure approximately 25mm wide. Start winding close to one end by securing the enamelled wire by a piece of insulating tape. Leave approximately 100mm for attachment. Wind the wire tightly around the ferrite rod, taking care to keep the coil together and not to overlap the windings. To help hold the windings in place, a piece of double-sided tape can be placed on the ferrite rod. Before soldering the aerial to the circuit board, scrap off the enamel coating from the ends of the wire.



   The quality of reception is dependent upon the care taken in winding the aerial. The signal reception will vary dependant upon location and is better away from large buildings that can distort the signal.
2. Solder the resistors in place.
3. Solder the smaller capacitors in place.
4. Solder the BC548B into the circuit.
5. Solder the TA7642 radio IC in place.



6. Solder the variable tuning capacitor into position.
7. Attach the connecting wires to the headphones socket.
8. Attach the headphones socket to the circuit board.
9. Solder the aerial in place (remove the coating from the enamelled wire first).
10. Attach the AA battery holder to the circuit board.