

Simple AM Radio Transmitter

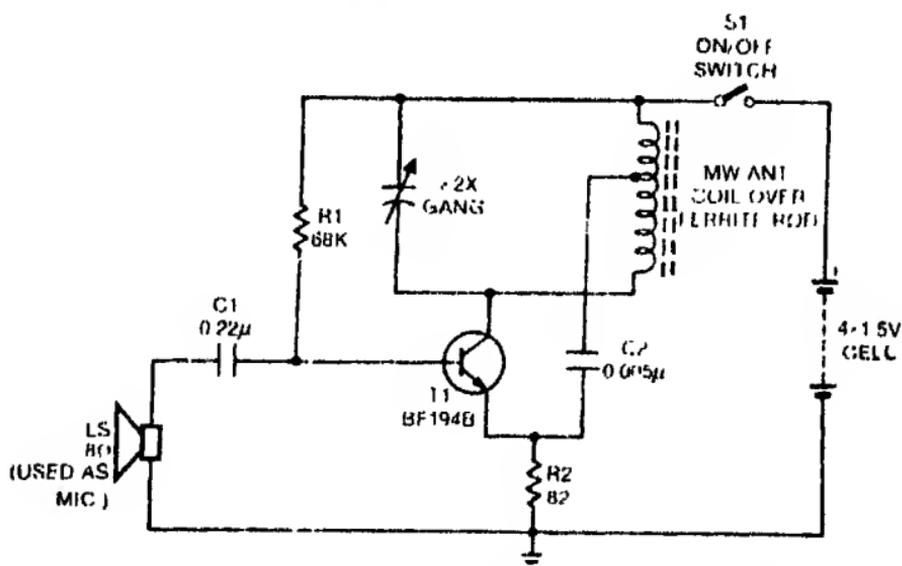
This very simple radio transmitter uses one transistor only. Its other features are: (a) very low current drain (about 1.5 mA); (b) it works well even without any aerial (this doesn't mean that its performance with an aerial would not be better); and (c) all the components, except the loudspeaker (used as microphone), can be housed in a match box size enclosure.

The heart of the transmitter is the only transistor (BF194B) which serves as many as three purposes, viz, (a) generation of RF carrier wave as an RF oscillator; (b) ampli-

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fication of the audio signal coming from loudspeaker (LS) (here used as moving coil microphone) like an audio frequency amplifier; and (c) amplitude modulation of the RF carrier wave with the incoming audio signal as a modulator.

The audio signal from the microphone (LS) is fed to the base of the transistor for amplification. The collector of the transistor is connected to the resonant circuit. To continue the oscillation, a positive feedback is provided in a way similar to that of the local oscillator of superheterodyne radio receiver. The RF wave generated in this way is modulated in



amplitude by the amplified audio signal. This amplitude modulated RF wave can be received by a nearby AM radio receiver tuned to the frequency of the emitted RF wave. The frequency of the emitted RF wave can be changed by varying the capacitance of VC1 (one section of a 2X gang).

Don't forget to insert a ferrite rod inside the antenna coil. Place the receiver about a metre or two from the transmitter and tune the receiver near the high frequency end of the MW band where no station is being heard. Now rotate the gang of the transmitter until you hear a hissing sound in the receiver.

The radio receiver should not be kept so close to the transmitter that it can cause unwanted feedback from the loudspeaker of the receiver to the microphone of the trans-

mitter and break into spurious oscillation thereby producing a shrill noise. If a shrill noise is heard, increase the distance between the receiver and the transmitter until the noise subsides.

Now speak over the microphone (loudspeaker) of the transmitter and feel the thrill of hearing your own voice in the radio receiver!

This transmitter can be used for very short distance communication, say from one room to another, as an intercom. The range of this transmitter may be increased to some extent by connecting an aerial to the collector of the transistor through a capacitor of the order of 100 pF.

A small 6cm dia., 8-ohm permanent magnet loudspeaker fitted in a wooden cabinet is recommended for use as the microphone.

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