About FM transmitter DIY Learning Kit for Beginners

Assembly tutorial is available at www.buildcircuit.com. If you have been making DIY kits, you will easily figure out where the components are to be soldered, it is very easy.

This is one of the easiest and simplest FM transmitters for amateur and electronics beginners. With this DIY kit, you can transmit your voice or audio over an ordinary FM radio within the FM broadcast band. The best thing about this transmitter is that you don't have to make your own inductor for this kit. Making an inductor is bit hard for amateurs. Besides, this kit is not only capable of transmitting voice using microphone but also transmitting music from your music player.

You can use this FM transmitter/microphone in two ways:

a. **Audio transmission using electret microphone:** You can transmit your voice to an FM radio with the electret microphone. You can also place the transmitter circuit close to any loud speaker so that the microphone picks up the sound and transmits to the tuned FM radio.

b. **Audio transmission connecting speaker stereo jack to audio source:** For hearing better sound, you may connect it to your computer, ipod or mp3 player using a speaker jack. The audio of your music players get transmitted to your nearby radio.

Features:

Frequency Range: 88-108MHZ (Frequency can be changed by moving the inductor coil).

Operating voltage: 3V-9V

Transmission range: More than 30 meters in open area. The transmission depends upon the length of antenna used. Kit package includes a simple 10cm long wire. The signal can be transmitted even further with longer antenna of length around 50cm.

How does it work ?

Electret microphone (MIC) converts the natural sound signal into the electrical signal. The capacitor C2 is coupled to the base of transistor Q1- S9018 and whenever there is signal from the microphone, the junction capacitance of the transistor changes that contributes to change in oscillation frequency.

Resistor R1(2.2K) is a microphone MIC bias point resistance, usually value between 2K-5. 6K is preferred, R2 provides biasing to the base of transistor. C4 and inductor L (5.5 turns coil) make up the oscillator tuning circuit, you can change the value of C4 and L to change the transmission frequency.

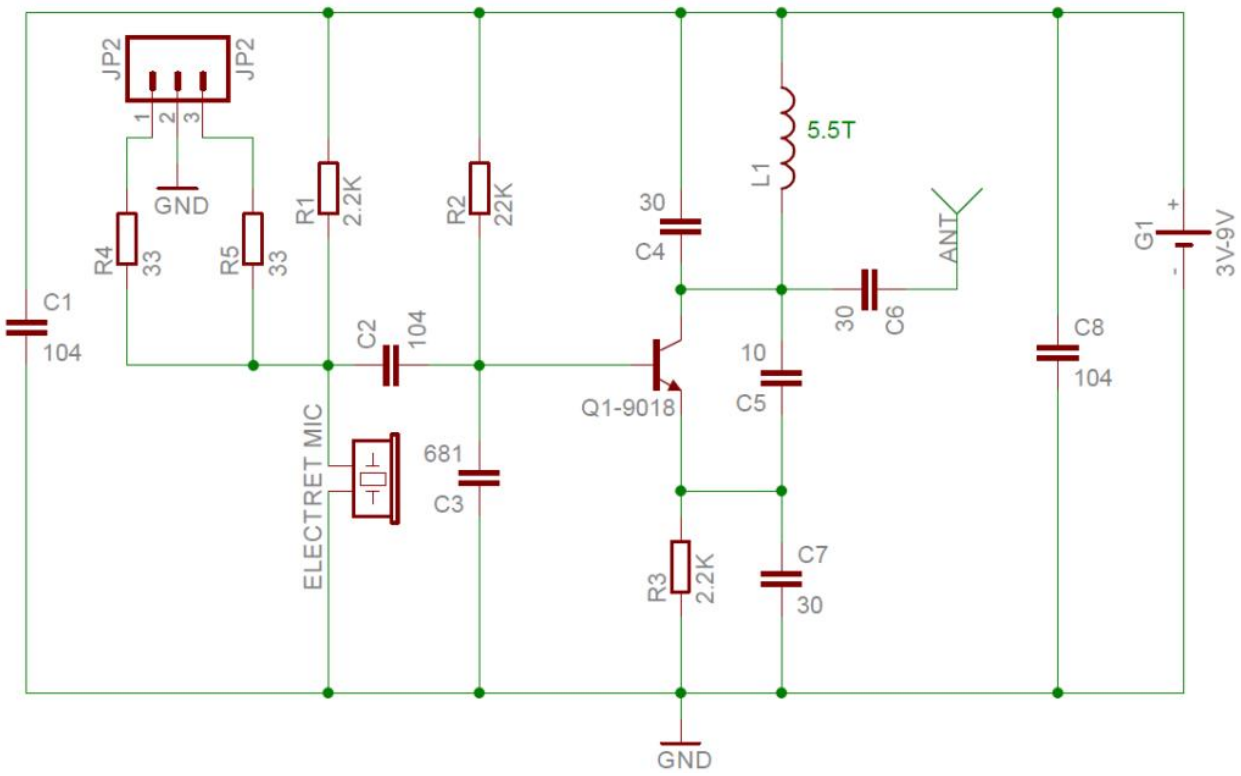
Formula for frequency calculation:

$$f_o = \frac{1}{2\pi\sqrt{LC}}$$

Testing of the kit:

Find an FM radio, turn on the power and volume, adjust the frequency around 88 MHz. Connect the kit to the power supply board, align towards the radio and use a screwdriver to adjust the oscillation coil L until the radio catches the signal. Then slowly increase the distance between the microphone and radio, while properly adjusting the radio (or handset) volume, tuning knob until the clearest sound is heard.

Schematic:



This kit is available at www.buildcircuit.com.au.