FM TRANSMITTER DESIGN

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***Abstract*- The main aim of this paper is to develop low power transmitter. Fm transmitter has wide application in various field especially for security purpose.fm transmitter is basically a low power consuming device .in this paper we will learn the method of design of the frequency modulated transmitter with a frequency of 100mhz in a range of 100m under favourable condition**

I. INTRODUCTION

generally all fm transmitter circuits require some kind of hand build inductor/coil and after building the transmitter it is necessary to adjust that coil and trimmer capacitor a little to adjust the transmitter to transmit on desired frequency. The circuit is using a 1uh inductor mostly look like resistors. 39pf capacitor is used in the place of trimmer capacitor. After building the circuit it is not necessary to do any other adjustment and tuning. The circuit can be operated with 9 to 12 volt dc.for maximum range a 30 inch wire kept vertically used as antenna

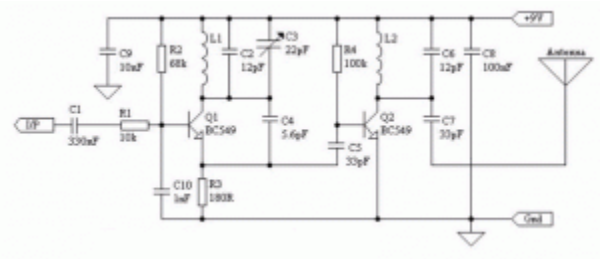
low power fm transmitter is designed to use an input from another sound source and transmits on the commercial fm band. This low power fm radio transmitter is actually quite powerful. The first stage is the oscillator, and is tuned with the variable capacitor select an unused frequency, and carefully adjust c3 until the background noise is removed

The q1 stage consisting the oscillator, the audio amplifier and the modulator the q2 stage which is made up majorly of the rf amplifier and the antenna 3.2q1 stage one transistor is used as the audio frequency (af) amplifier. The colpitt's oscillator is used. It consist a transistor which amplifiers the af and the tank circuit for the generation of the carrier wave. The model of the osci q1 is a conventional colpitts oscillator design. The audio signal applied to the base of q1 causes the frequency to change, as the transistor's collector current is modulated by the audio. This provides the frequency modulation (fm) that can be received on any standard fm band receiver.

The inductors are 9.5 turns of 1mm diameter enamelled copper wire. They are close wound on a 3mm diameter former, which is removed after the coils are wound.

The output is a low power of 100 mw, but for some of you this fm rf transmitter can delivers the desired power for broadcasting on your street or with a proper antenna you can cover a small neighborhood. If you need a power wireless fm transmitter use the above menu, you can find transmitters starting with low fm power up to high power fm transmitters.

II. LOW POWER TRANSMITTER CIRCUIT DIAGRAM



Circuit diagram of low power fm transmitter

Following component are used for circuit design of fm transmitter

1. Q1 transistor
2. Variable capacitors vc1 also called trimeer capacitor
3. Resistor
4. Inductors
5. Anteena

FM transmission is done by the process of audio pre amplification, modulation and then transmission. It is done by first amplifying the audio signal, generating a carrier signal using an oscillating and then modulating the carrier signal with the amplified audio signal. The amplification is done by an amplifier,

whereas the modulation and carrier signal generation is done by an variable frequency oscillator circuit. The power of the FM signal from the oscillator is then amplified using a power amplifier to produce a low impedance output, matching that with the antenna

REFERENCES

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