DESIGNING AND IMPLEMENTATION OF MULTI-FREQUENCY JAMMER (FM JAMMER)

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ABSTRACT

Cell phones and radio receivers are used everywhere these days. It's great to be able to call anyone anytime. But unfortunately, restaurants, movie theatres, concerts, shopping malls and churches all suffer from the spread of cell phones because not all cell-phone users know when to stop talking. While most of us just grumble and move on, some people are actually going to extremes to retaliate. FM Jammer can be one of the solutions to this problem. A transmitter is a device from which signal is transmitted into free space, after insertion of suitable carrier, i.e. is superimposed on a high frequency-sine wave. In Frequency Modulation, frequency of carrier is varied according to the modulating signal. The capture effect, or FM capture effect, is a phenomenon associated with FM reception in which only the stronger of two signals.Major application of Jammer includes in controlling a hostage situation in which police can control when and where a captor can make a phone call. Police can block phone calls during a drug raid so suspects can't communicate outside the area. Cell-phone jammers can be used in areas where radio transmissions are dangerous, (areas with a potentially explosive atmosphere), such as chemical storage facilities or grain elevators. Moreover it can be used in places like Hospitals, restaurants, movie theatres, concerts, shopping malls and churches where silence is required

Keywords- Baseband Signal, Carrier, Fm Modulation, Capture Effect, Bandwidth.

I INTRODUCTION

It is not practicable to send electronic signals over wire to distant places. They are sent by radio. Low frequency signals, as in the audio range, cannot be frequency signals, as in the audio range, cannot be transmitted efficiently, so they are converted to higher frequency called radio frequencies, which can be transmitted effectively over long distance. The electronic equipment used to produce radio frequency (RF) signals for radio transmission is called a transmitter. The function of the transmitter is to generate RF carrier of proper frequency and sufficient power. The output of a transmitter is applied to an antenna, which radiates the signal into space. A basic transmitter consists of an oscillator and an RF amplifier. The oscillator generates a continuous sinusoidal output that serves as the carrier

frequency. The carrier is amplified to the required power level by the RF amplifier as shown in figure. An antenna connected to the output of RF amplifier radiates the signal into space.

II LOGIC BLOCK DIAGRAM & WORKING

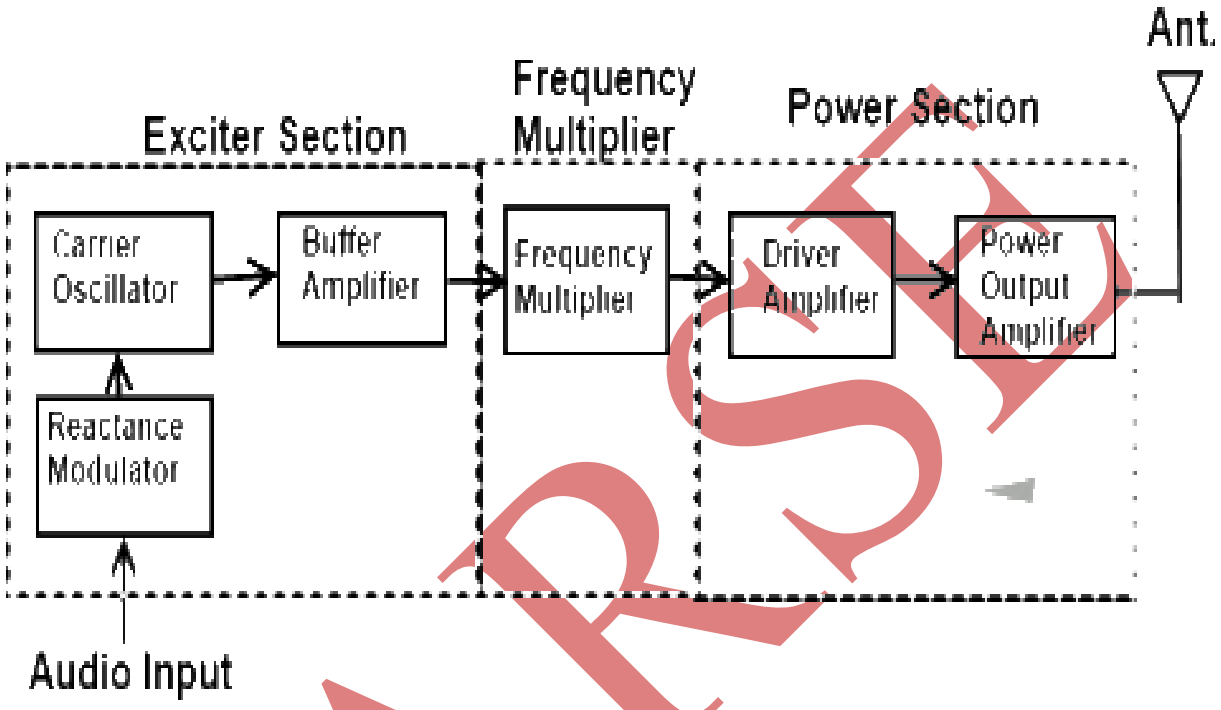

Figure 1: Logic & Block Diagram

2.1 Carrier Oscillator: Carrier is a high frequency signal which is used for long distance transmission of low-frequency message signals. Oscillator is an instrument that generates repetitive alternating current/voltage waveform of fixed amplitude and frequency without any external input signal.

2.2 Reactance Modulator: Modulation is defined as the superposition of a modulating signal over high frequency carrier signal so as to change the characteristics of the carrier wave according to the modulating signal.

2.3 Frequency Amplifier: In Frequency Amplifier, the frequency of carrier is varied by modulating voltage whose amplitude remains constant.

2.4 Transmitter: Transmitter as a whole refers to that block which consists of encoder, modulator and transmitting antennae in which a signal is converted into radio waves.

2.5 Power Amplifier: Amplifier is a device which boosts the input signal in parameters of either current or voltage.

2.6 Buffer Amplifier: A Buffer is the one that provides the impedance transformation from one circuit to another. **2.7 Capture Effect:** The capture effect is defined as the complete suppression of the weaker signal at the receiver limiter (if it has one) where the weaker signal is not amplified, but attenuated.

III PROBLEM AND CHALLENGES

3.1 **Problem Faced:** By gluing an integrated circuit (IC) to an inlay. This poses a problem as vibration and high temperatures will loosen the connection. If the IC loses connection than system is unable to work

3.2 **Challenges:** Many of the components were tiny and could not be soldered without significant risk of damage to componentThis was overcome by using conductive pens to create contacts on these components Oscillator signals appeared modulated .HF signals leaked through breadboard and interfered with one another. Corrected by placing MUX on RF board

IV APPLICATIONS

Such device can be used to jam detonation of remote controlled explosive devices. In case of earthquakes, floods or other such circumstances, we can jam the desired frequency band and deliver the message needed to be delivered. It can be used in military installations like in military headquarters, checkpoints, base camps etc.

V CONCLUSION

FM Jammer is used for the cell phones and radio receivers are used everywhere these days. It's great to be able to call anyone anytime. But unfortunately, restaurants, movie theatres, concerts, shopping malls and churches all suffer from the spread of cell phones because not all cell phone users know when to stop talking. While most of us just grumble an move on some people are actually going to extremes to retaliate.

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