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Blocking the mobile phones signals with the help of jammer

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Abstract— Mobile jammer is used to prevent mobile phones from receiving or transmitting signals from the base stations. Mobile jammers can be used in practically any location, but are used in place where a phone call would be particularly disruptive like Temples, Libraries, Hospitals, etc. As with other radio jamming, mobile jammers blocks mobile phone use by sending out radio waves along the same frequencies that mobile phones use. This causes enough interference with the communication between mobile phones and communicating towers to render the phone unusable. Upon activating mobile jammers, all mobile phones will indicate "NO NETWORK" or there will no actual two-way communication. Incoming calls are blocked as if the mobile jammer is on, when the mobile jammer turned off, all mobile phones will automatically re-establish communications and provide full service.

Keywords—jammer, oscillator, tuning, frequency, amplifier.

I. INTRODUCTION

It's great to be able to call anyone at any time. Unfortunately, restaurants, movie theatres, concerts, shopping malls and churches all suffer from the spread of cell phones because not all cell phones users know when to stop talking. Who hasn't seethed through one side of a conversation about an incredibly personal situation as the talker shares intimate details with his friends as well as everyone else in the area? While most of us just grumble and move on, some people are actually going to extremes to retaliate. Cell phones are basically handheld two-way radios. And like any radio, the signal can be disrupted or jammed.

A mobile jammer is an instrument which is used to prevent mobile phones from receiving signals from the base stations which can be used in practically at any location, but are mostly found in places where a phone call would be particularly disruptive because silence is expected.

Disrupting a cell phone is the same as jamming any other type of radio communication. A cell phone works by communicating with its service network through a cell tower or base station. Cell tower divide a city into small areas, or cells. As a cell phone user drives down the street, the signal is handed from tower to tower. A jamming device transmits on the same radio frequencies as the cell phone, disrupting the communication between the phone and the cell-phone base station in the tower. It is called as a denial-of-service attack. The jammer denies service of the radio spectrum to the cell-phone users within range of the jamming device.

II. EXISTING SYSTEM AND FLAWS IN EXISTING SYSTEM

In market, there are various types of jamming devices available which are using different jamming techniques. Some of those devices are built with only one feature in it like it will jam only 2G or only 3G network compatible cell phones.

For e.g.:

Type	Emergency call	Efficiency	Regularity Approval	Implementation
"A"	Blocked	Low	Not allowed	Very simple
"B"	Allowed	Medium	Required	Complex (Required third party Cellular/PCS Services)
"C"	Allowed	High	Required	Complex (Required Intelligent Handset)
"D"	Allowed	Medium	Required	Simple
"E"	Blocked	High(No signal transmitted)	Allowed	Simple

But in our project we have overwhelm the limitations of those available hardware devices by enhancing the quality and simplicity of the device.

III. EXISTING SYSTEMS

- **Type "A" Device:**

Type "A" Devices are simple Jammer. This type of device comes with several independent oscillators transmitting jamming signals capable of blocking frequencies used by paging devices as well as those used by cellular systems control channels for call establishment.

- **Type "B" Device:**

Type "B" Devices does not transmit an interfering signal on the control channels. The device, when located in the designated quite area, functions as a detector. It has a unique identification number for communicating with the cellular base station.

- **Type "C" Device:**

Type "C" Devices do not transmit an interfering signal on the control channels. The device, when located in the designated quite area, functions as a beacon and any compatible terminal s instructed to disable its ringer or disable its operation, while within the coverage area of beacon.

- **Type "D" Device:**

Type "D" Devices behaves like a small, independent and portable base station, which can directly interact with the operation of the local mobile phone. The jammer is predominantly in receiving mode and will choose to interact and block the cell phone directly if it is within close proximity of the jammer.

- **Type "E" Device:**

Type "E" Devices are used for passive jamming. This technique is using EMI suppression technique to make a room into what is called Faraday cage. Although labor intensive to construct, the Faraday cage essentially Blocks or greatly attenuates, virtually all electromagnetic radiation from entering or leaving the cage or in this case a target room.

IV. PROPOSED SYSTEM

We have designed and developed a project based on hardware viewing concept "Mobile Jammer" which blocks the mobile networks of a designated area that are receiving their network from the base stations. It overpowers the mobile receiving networks by transmitting the same frequency received by mobile phones. We have designed a block diagram of mobile jammer which shows the flow of our project. We have designed it in a way which gives full details about each block, how a jamming signal is transmitting i.e. how it will jam a mobile phone.

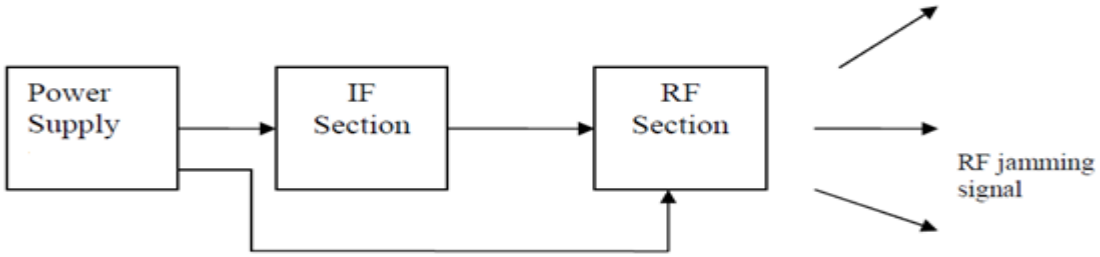


Figure 1. Block diagram of working of Mobile Jammer.

Power Supply

Power Supply makes our creation to become alive. Generally mobile phone jammers use 5V DC to operate. Thus we used Lithium-ion battery to supply our creation.

IF Section

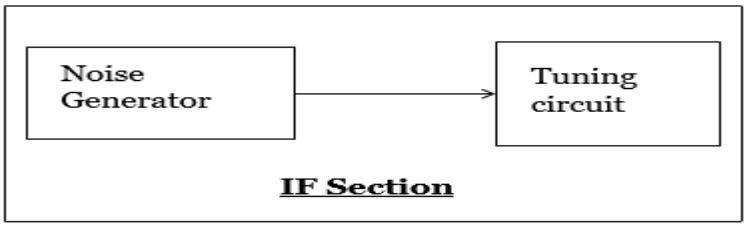


Figure 2. IF-Section

The function of the IF-Section of the Mobile Jammer is to generate the tuning signal for the VCO (Voltage Controlled Oscillator) in the RF-Section, which will sweep the VCO through the desired range of frequencies. This tuning signal is generated by a noise generator, and then offset by proper amount so as to sweep the VCO output from the minimum desired frequency to a maximum.

- **Noise Generator**

Produces random electronic output in a specified frequency range to jam the cell phone network signal (part of the tuning circuit).

- **Tuning Circuit**

Tuning circuit is an open-loop which is quite simple and requires just a few op-amps with additional passive components. It is a saw tooth wave generator which makes VCO to go from lowest to highest frequency**.**

RF Section

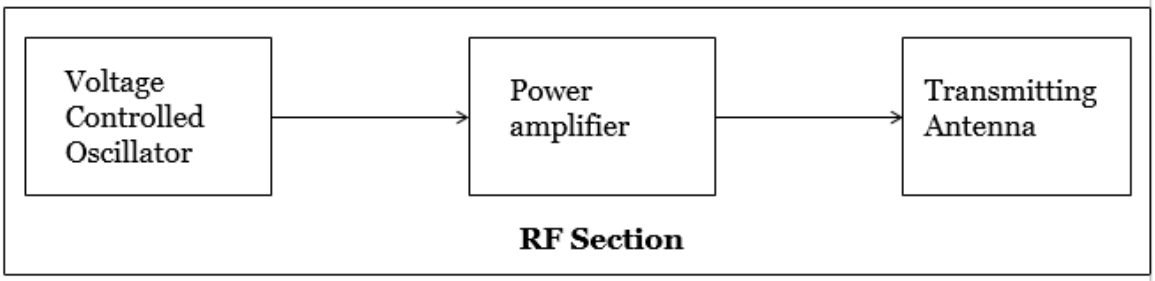


Figure 3. RF-Section

The RF-section is the most important part of the mobile jammer it consist of the Voltage Controlled Oscillator (VCO), RF Power Amplifiers and the Antenna. These components were selected according to the desired specification of the jammer such as the frequency range and the coverage range.

- **Voltage Controlled Oscillator**

VCO is the most important among other parts. It is like a heart of our jammer. VCO's can be built using op-amps, resisters and capacitors, but the low cost , availability and reliability of prefabricated VCO's make it optimum to just purchase it. VCO produces RF signal which will interact with the blocked device. Firstly we selected the frequencies which will be used in our jammer.

- **Power Amplifier**

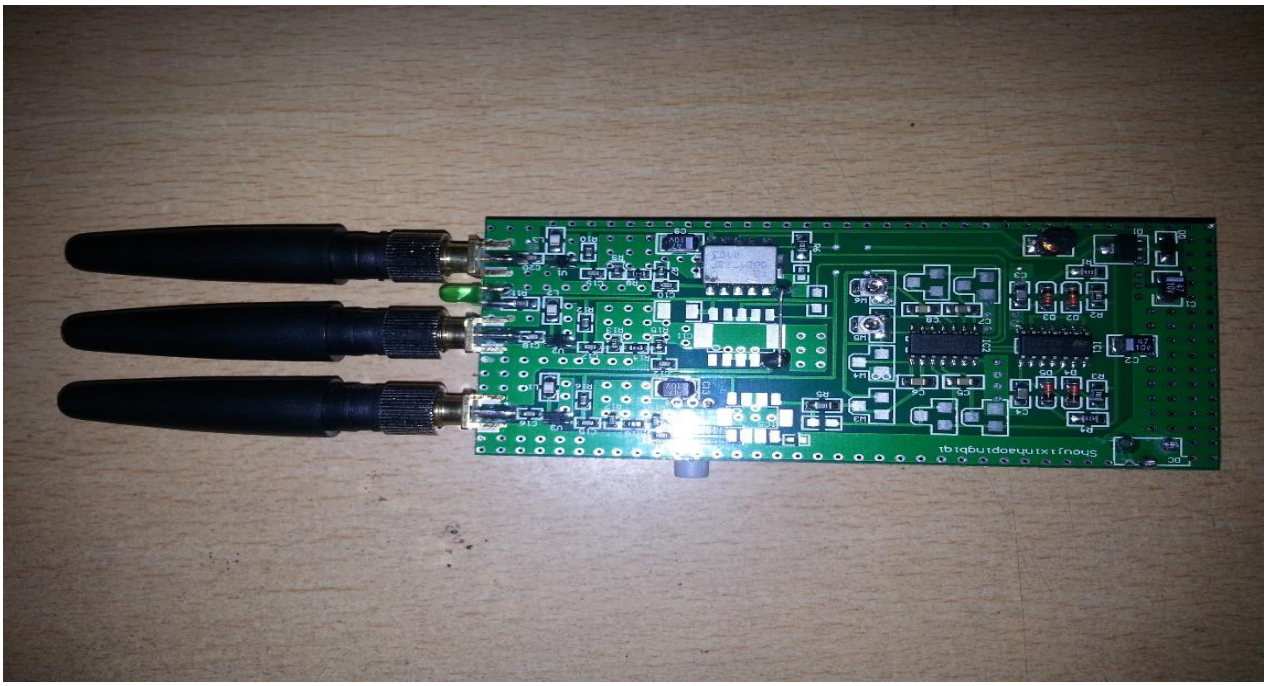
Power amplifier is what we need to increase the area covered by our jammer along with its signal blocking power. The more power has our jammer, the bigger radius it jams.

- **Transmitting Antenna**

Figure 4. Transmitting Antenna

Transmitting Antenna is a tool which transmits signals produced by our jammer. We are using three antennas for blocking CDMA, GSM, 3G networks.

Designed Circuit



- **Hardware Testing**

In this project, jammer runs properly and tries to jam the cell phone networks in the range of 5-8 meters. Testing check for three types of networks, CDMA, GSM & 3G. As the jammer is switched ON, the green LED on it starts glowing. The green LED gives the indication that the jammer is ON and is working.

➢ **Mobile Testing**

After switching on the jammer circuit, the green LED glows and jammer starts transmitting the jamming signal. On this, the mobile phones supporting CDMA, GSM & 3G networks, starts getting their networks down. That means, if any want to call someone will not be able to connect their calls.

V . CONCLUSION

Mobile jammer can be used in practically any location, but are used in place where a phone call would be particularly disruptive like temples, libraries, hospitals, etc. But most importantly it should be used in schools and the college areas where the cell phones are strictly banned.

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