



DESIGN AND PERFORMANCE OF MOBILE PHONE JAMMER

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Abstract:

The continuously use of mobile phone can be attributed to it can use in any places and thus have become one of the most widely used devices in mobile communication which makes it so important in our lives.

The convenience and portability of cellphones has made it possible to be carried everywhere. e.g Churches, lecture halls, medical centers etc. Its benefit can create disturbance in some places when there is continuous beeping or ringtones of cell phones which becomes annoying when such noise is disturbance in areas where silence is required or the use of mobile phone is restricted or prohibited like Libraries and Study rooms

A mobile phone jammer is an instrument used to prevent cellular phones from receiving signals from base station. It is a device that transmit signal on the same frequency at which the GSM system operates, the jamming success when the mobile phones in the area where the jammer is located are disabled. The mobile phone jammer unit is intended for blocking all mobile phone types within designated indoor areas.

The mobile Phone Jammer is a 'plug and play' unit, its installation is quick and its operation is easy. Once the mobile Phone Jammer is operating, all mobile phones present within the jamming coverage area are blocked, and cellular activity in the immediate surroundings (including incoming and outgoing calls, SMS, pictures sending, etc.) is jammer. This paper focuses on the design of a cell phone jammer to prevent the usage of mobile communication in restricted areas without interfering with the communication channels outside its range.

Keywords: Base Station; Cell Phone; Jamming; GSM System.

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1. Introduction

A mobile phone jammer is a device used to prevent mobile communication by causing interference between the mobile phone and the base station. When used the jammer effectively disables mobile phones around the restricted SS area. These devices can be used practically in any location, but are found primarily in places such as lecture halls.

The receiver, which is the cell phone in our case, receives the transmitted signal and tries to demodulate the signal. Since this signal is not within the bandwidth of the cell it displays

"Network Busy" on the LCD panel. Since the power of the transmitter is greater than the original signal transmitted from the cell phone tower the cell phone will not respond to the original signal.

2. Jamming Techniques

Type "A" Device: JAMMERS

This type of device comes equipped 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: Intelligent Cellular Disablers

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

Type "C" Device (Intelligent Beacon Disablers)

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

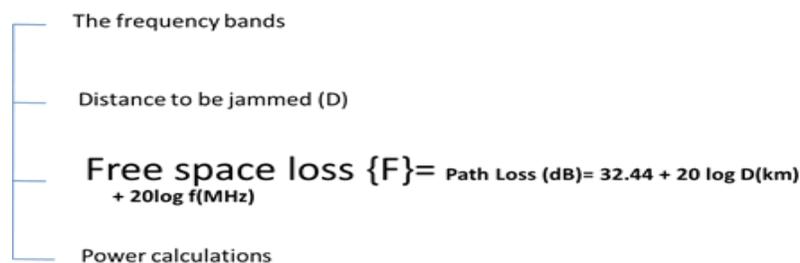
Type "D" Device (Direct Receive & Transmit Jammers)

This jammer behaves like a small, independent and portable base station, which can directly interact intelligently or unintelligently with the operation of the local mobile phone. The jammer is predominantly in receive mode and will intelligently choose to interact and block the cell Phone directly if it is within close proximity of the jammer.

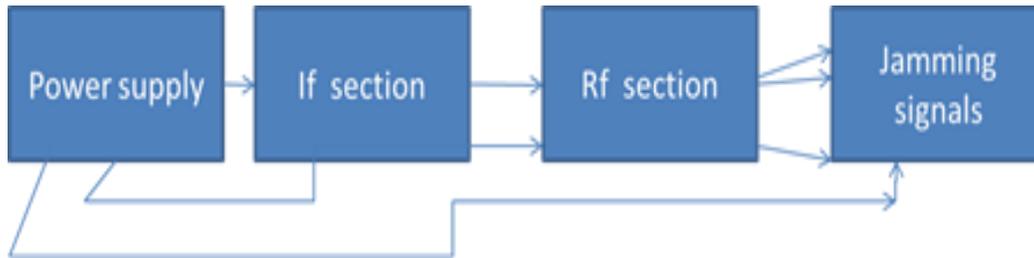
Type E Device (EMI Shield - Passive Jamming)

This technique is using EMI suppression techniques 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.

3. Design Parameters/Specifications



4. Block Diagram

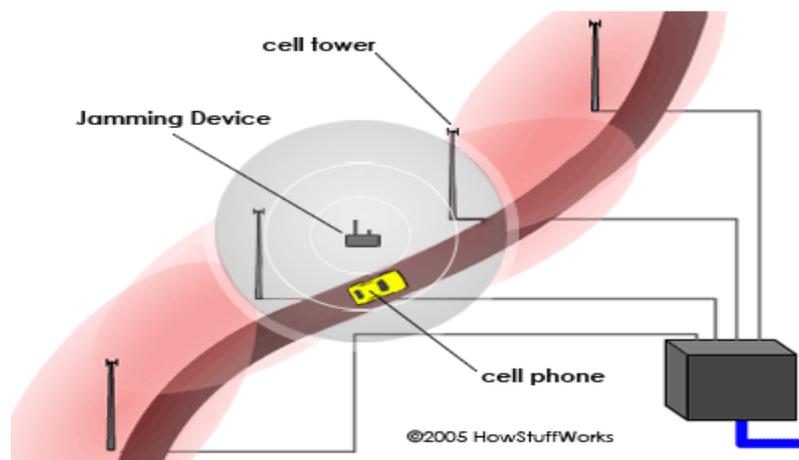


The IF Section consists of a triangle wave generator, noise generator, mixer and a clamper. The function of the IF section is to generate a tuning voltage for the voltage-controlled oscillator.

The output signal of the IF section is the combination of the triangular wave signal from the triangle wave generator and noise signal from the noise generator. The RF Section is the most important part of the jammer device since the output signal of this section will be interfacing with the mobile frequency signal. The RF section consist of a voltage controlled oscillator, power amplifier antenna.

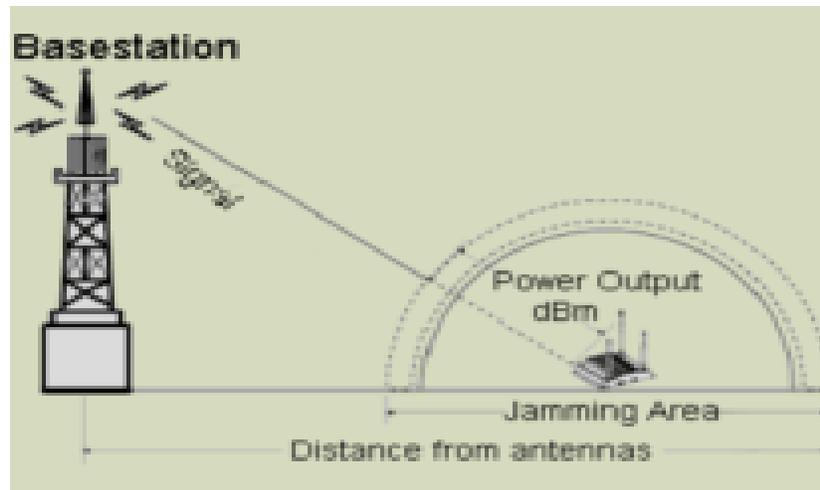
5. How Mobile Jammer Works

A jamming device transmits - same radio frequencies of greater power as the cell phone, disrupting the communication between the phone and the cell-phone base station in the tower. It's a called a denial-of-service attack.



This technique is referred to DOS. In this technique, the device transmits a noise signal at the same operating frequency of the mobile phone in order to decrease the signal-to-noise ratio (SNR) of the mobile under its minimum value. [3]

This causes interference with communication of cell phones and towers to render the phones unusable. On most phones, the network would be out of range.



The heart of the system is the RF oscillator. The frequency of the oscillator is 900 MHz. This is the carrier frequency of the jammer. This frequency is modulated by the modulating signal given to the base of the transistor and the modulated output is obtained across the collector terminal. This modulated output is connected to the antenna, which converts the electric signal into electromagnetic signal and transmits it into the space.

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6. Applications

- To maintain the complete silence in library and lecture hall
- To avoid fraud in examination hall
- To avoid disturbance in class room
- For providing security in business conference, board of directors rooms, seminars, etc.,
- For providing calm and peaceful atmosphere in Hospitals
- Church/Mosques/Cathedral/Temple/Religious establishment

7. Future Scope of Jamming Technique

- While the law clearly prohibits using a device to actively disrupt a cell-phone signal, there are no rules against passive cell-phone blocking.
- Companies are working on devices that control a cell phone but do not "jam the signal."

8. Conclusion

Every technology has good aspect as well as bad aspect the important thing is, how we are using it. Cell phone jammers are very useful to the society from the anti-social elements. We can save our national leaders. we can restrict the communication network between the anti-social elements by using the Mobile jammers. Cell phone jammers prevent the students from carrying cell phones to the colleges.

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