

A Review : Jamming Techniques in Mobile Phones

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Abstract: As a result of the proliferation of wireless technologies, electronic jamming in wireless networks has become a serious analysis downside attributable to the convenience in block communication in wireless networks. Like in historical places where the use of phone is prohibited specially clicking pictures is not allowed, there jamming techniques plays a very important role to block users for clicking pictures as well as blocking mobile signal. Jamming may be a technique during which a receiver is full with a high power transmission of electronic countermeasures signal from a transmitter i.e. decreasing in S/N ratio. The practical purpose of jamming techniques is to restrict people from using their phones either for clicking pictures or for calling which causes noise and disturbance. A transportable sender could be a device that deliberately transmits signals on a similar RF as mobile phones, disrupting the communication between the phone and also the cell-phone base station.

Keywords: RF, S/N ratio, Proliferation, Wireless Networks, Jamming Techniques.

I. INTRODUCTION

In our day to day life, the usage of cell phones has hyperbolic staggering. So, nowadays silence and security square measures the requirements of hour in several places, this could be done by cellular phone jammers. Cell phone transmitter is largely a tool that purposefully tries to interfere with the physical transmission and reception of wireless communication. "Mobile Jammers became a necessity for accomplishing a additional civilised society as a result of there's a growing demand for dominant the employment of cellular phones publicly places like non secular theatres, libraries and others". Communication jam devices were 1st developed and employed by military. Wherever plan of action commanders use RF communications to exercise management of their forces, associate in nursing enemy has interest in those communications. This interest comes from the basic space of denying the thriving transport of the knowledge from the sender to the receiver. This paper describes the survey of Associate in nursing increased technique for jam the mobile phone signals. [1]

The main purpose of a telephone transmitter is to jam a telephone signal in associate passing selected house. telephone transmitter is frequency instrumentation that produces a RF signal to beat the telephone frequency and effectively jam the signal which ends no service to any form of telephone like CDMA and GSM at intervals the vary of 800MHz to 900MHz.[2] Cellular phone transmitter encompass four major components that during which within which} initial is Voltage-controlled generator which generates the radio radiation

which will interfere with the telephone signal. Second is standardisation circuit that controls the frequency at that the transmitter broadcasts its signal by inflicting a particular voltage to the generator. Third is Noise generator that Produces random electronic output in an exceedingly mounted frequency vary to jam the cell-phone network signal (part of the standardization circuit) RF amplification (gain stage) - Boosts the flexibility of the frequency output to high enough levels to jam a symptom. Fourth is Antenna, each electronic warfare device has associate antenna to send the signal. Some unit of measurement contained at intervals associate electrical cupboard. On stronger devices, antennas unit of measurement external to supply longer vary and can be tuned for individual frequencies. [1][2]

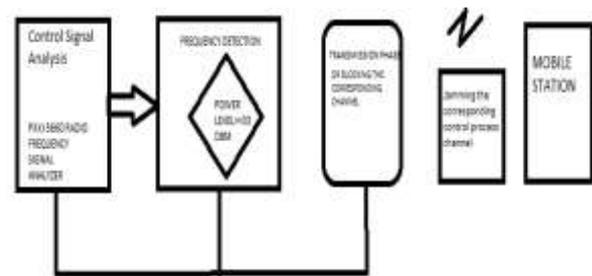


Fig. 1. Jamming Procedure Representation

II. LITERATURE SURVEY

The technique used in most of the economic jammers is based on noise attack. The techniques on that intelligent mobile detector system with frequency ECM options is meant to find the RF signals from mobile phones are mentioned. These techniques are *Spoofing*, in this reasonably ECM; the device forces the mobile to show off itself. this sort is unbelievably powerful to be enforced since the electronic countermeasures device initial detects any movable in an extremely specific house, then the device sends the signal to disable the movable. Some kinds of this technique can realize if a close-by mobile is there and sends a message to tell the user to modify the phone to the silent mode (Intelligent Beacon Disablers).Second is, Shielding attack, this can be referred to as TEMPEST or physical phenomenon shielding. this sort desires closing a neighbourhood in AN extremely chemist cage order that any device at intervals this cage can't transmit or receive RF signal from outside of the cage. Third is, Denial of service, this system is spoken DOS. Throughout this system, the device transmits a noise signal at the same in operation frequency of the movable therefore on decrease the signal/noise ratio (SNR) of the mobile below its minimum value. this kind of electronic countermeasures

technique is that the best one since the device is sometimes on. [3][4]

In our analysis we have a tendency to find that the higher than technique is advanced one as compared to ARM7. The ARM7 may be a general purpose 32-bit microchip, that offers high performance and extremely low power consumption. The ARM design is predicated on Reduced Instruction Set laptop (RISC) principles, and also the instruction set and connected decipher mechanism square measure abundant less complicated than those of small programmed advanced Instruction Set Computers.

III. COMPARISON TABLE OF JAMMING TECHNIQUES

There are four jamming techniques for mobile phones. Table shows comparison between them on the various parameter like functionality and behaviour in different frequency environment.

Table: 3.1 Comparison Between Jamming Techniques

SPOOFING	SHIELDING ATTACKS	DENIAL OF SERVICE	ARM7
In This Kind Of Jamming The Device Forces The Mobile To Turn Off Itself.	This is known as TEMPEST or EMF shielding.	This technique is referred to DOS.	The ARM architecture is based on Reduced Instruction Set Computer (RISC) principles.
Since the jamming device first detects any mobile phone in a specific area, then the device sends the signal to disable the mobile phone.	This kind requires closing an area in a faraday cage so that any device inside this cage can't transmit or receive RF signal from outside of the cage.	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.	The instruction set and related decode mechanism are much simpler than those of micro programmed Complex Instruction Set Computers.

This type is very difficult to be implemented mobile phone	This is also very difficult to implement	This kind of jamming technique is the simplest one since the device is always on	The instruction set and related decode mechanism are much simpler than those of micro programmed Complex Instruction Set Computers. This simplicity results in a high instruction throughput and impressive real-time interrupt response from a small and cost-effective
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IV. FUTURE SCOPE

The main drawback of ARM7 technique is that when all mobile phones gift within the coverage space are blocked and cellular activity within the immediate surroundings is jam-pawncked below bound circumstances it's necessary to create EMERGENCY CALLS. Since all the signals are blocked creating calls is not possible, that becomes significant recoil. Mobile phone jammers used in the military can effectively prevent leak important military secrets. Mobile phone signal blocker used in the examination rooms, can effectively prevent cheat through mobile communications. Cell phone signal blocker used in schools, can assure students to study without distraction and have a quiet rest. Cell phone jammer used in theaters, can make everyone enjoy the program without disturb.

Mobile phone jammer used in meeting rooms or training rooms, can assure the effective of the meeting. Mobile phone jammer used in museums, religious places, historical places for the security purpose and also for maintaining silence. In fact, cell phone jammer is urgent needed in jails. At present, all countries in the world have regulation that forbidden use of mobile phones in prison, but due to the defect of management, it's difficult to do that. In future the further modification will be to resolve the above problem.

V. CONCLUSION

This paper is successfully completed by doing a review on various jamming techniques. By these techniques we

can deactivate all the mobile signals at any location that stops phone ringing during a explicit fundamental measure. A jammer is made using these techniques which we have mentioned in this paper and the device may well be use in places wherever ringing isn't desired at specific times, as these ringing might disturb individuals in such places. The main objective for us was to find the more suitable and efficient jamming technique that can make a additional intelligent and versatile transmitter that may modify U.S.A. to use it all told the places. We have done a review on four jamming technique and out of four jamming techniques ARM7 is best as it is simple to implement and is cost effective and generates a desired results more efficiently than others.

ACKNOWLEDGEMENT

Our thanks to the head of department, Computer Science and Engineering Poornima Institute Of Engineering And Technology and Mr. Abhishek Dadhich for his encouragement in the course of this work. We say thank you all.

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