

FINAL YEAR PROJECT REPORT

CELLULAR PHONE DETECTION **IN ACTIVE AND IDLE MODE**



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Cellular Phone Detection In Active and Idle Mode

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In the name of Allah, the most beneficent the most merciful

رَبِّ هَبْ لِي حُكْمًا وَأَلْحِقْنِي بِالصَّالِحِينَ
وَاجْعَلْ لِي لِسَانَ صِدْقٍ فِي الْآخِرِينَ

(84: الشعراء, 83)

My Raab! Bestow Hukmaan (religious knowledge, right judgment of the affairs) on me, and join me with the righteous. And grant me an honorable mention in later generations.

(Surah Ash-Shu'ara' Verse: 83-84)

Abstract

With the advancing technology, the cellular phone has become one of the important necessities of life. They are used even where they are required to be in switched-off mode only. We propose to detect the mobile phones in the places which strictly allow only OFF phones. The call and messages can be detected by catching the radio frequency disturbance, used for the transmission of data in GSM system, in the restricted premises. The AC waves captured by capacitor which acts as a loop antenna are then converted to voltage using differential property of op-amp to make the LED blink. And with the help of timer IC, the buzzer beeps. The device can act pretty well in a radius of approximately one meter.

In the idle mode, OTD analysis can be used to detect the presence of the phone. This technique is implemented by the coordination of network providers and software installed in the hand set. There is another helpful technique using microwave sensors which combines the advantages of spectrum analyzer and wide-band frequency detectors. These sensors are used to detect radio frequencies of cell phone.

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Dedication

With the blessings of Allah Almighty, we are able to dedicate this project to our Parents and Teachers for leading us into intellectual persuade and who inspired us towards the sacred task of learning and providing us with moral support.

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Chapter 1

INTRODUCTION

1.1 Project Motivation

Mobile phones are widely used now a day as a very helpful device. But as the technology becomes common its adverse effects also starts appearing. So the authorities are bound to keep some check, so that a device is not used for some illegal purpose. The incentive behind the project is to keep people by misuse of an otherwise useful gadget.

1.2 Problem Statement

Besides calls and text messages mobile phones are now used as mini-computers. We can view PDF file, can search the internet, use Bluetooth, WI-FI and many more. As every useful thing has its own disadvantage, so is the case with the mobile phones. Students use them in the examination halls for cheating purposes, is used by the prisoners, in confidential meeting for recording the conversations or leaking the secret decisions, in hospitals where the tone is annoying for the patients and there are chances of interference of the electromagnetic waves with the highly sophisticated equipments. On the petrol pumps it is desired for the same reason to switch off cell phone.

But we usually do not care and use phones without considering their hazards. So there must be some restrictions on the people to stop them from using phones in the prohibited areas.

1.3 Objective

Main objective is to help the university examination department to check for presence of and ON phone and its illegal use. As manual checking of a large number of students takes too much time and in the haste students are missed from being checked. Also it is

not possible to keep students from bringing their bags and other possessions on the exam.

It will also help the police to locate if any captive managed to have a phone. Device can be used in the army camps or confidential meetings. In the meeting especially it is unpleasant to check highly ranked officers physically for the phone. Device will detect the GSM activity without letting the person know who is using it.

1.4 Challenges

To detect the GSM activity, ceramic capacitors are used, whose one purpose is to detect very high frequency. Then passing the current through an IC we can use LED, whose blinks show the disturbance. But to detect a cell phone which is in the idle mode is not as easy and reasonable for a portable device. Different techniques can be used; one is by involving the network which is not feasible everywhere of course, as this technique utilizes large BTS continuously, mobile phones are supposed to have a particular software for the correspondence, new network element needs to be installed between the mobile phone and BTS.