

Cell Phone Detector

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Abstract— This handy, pocket-size mobile transmission detector or sniffer can sense the presence of an activated mobile cell phone from a distance of one and-a-half meters. So it can be used to prevent use of mobile phones in examination halls, confidential rooms, etc. It is also useful for detecting the use of mobile phone for Spying and unauthorized video transmission. The circuit can detect the incoming and outgoing calls, SMS and video transmission even if the mobile phone is kept in the silent mode. The moment the Bug detects RF transmission signal from an activated mobile phone, it starts sounding a beep alarm and the LED blinks. The alarm continues until the signal transmission ceases. Assemble the circuit on a general purpose PCB as compact as possible and enclose in a small box like junk mobile case. As mentioned earlier, capacitor C3 should have a lead length of 18 mm with lead spacing of 8 mm. Carefully solder the capacitor in standing position with equal spacing of the leads. The response can be optimized by trimming the lead length of C3 for the desired frequency. You may use a short telescopic type antenna.

Use the miniature 12V battery of a remote control and a small buzzer to make the gadget pocket-size. The unit will give the warning indication if someone uses Mobile phone within a radius of 1.5 meters.

Index Terms— Cell phone detector, Hidden cell phone module, Radio signal detector.

I. INTRODUCTION

As increase in the technology in the world using the electronic equipments are being used in a wrong way like, in the examination halls and confidential rooms. To avoid this, we are introducing a project called CELLPHONE DETECTOR This handy, pocket-size mobile transmission detector or sniffer can sense the presence of an activated mobile cell phone from a distance of one and-a-half meters. So, it can be used to prevent use of mobile phones in examination halls, confidential rooms, etc. It is also useful for detecting the use of mobile phone for Spying and unauthorized video transmission. The circuit can detect the incoming and outgoing calls, SMS and video transmission even if the mobile phone is kept in the silent mode. The moment the Bug detects RF transmission signal from an activated mobile phone, it

starts sounding a beep alarm and the LED blinks. The alarm continues until the signal transmission ceases.

II. HISTORICAL BACKGROUND

In early 80's and 90's century, there has no technology to detect the cell phones in the examination hall and in cell phone restricted areas. There is manual checking and there is still a chance of having the cell phone with the person if he is not checked properly. So, to avoid this problem, an automatic detection of cell phone is introduced.

III. OBJECTIVES

- Implement a simple cell phone detector.

IV. WHY CELL PHONE DETECTOR IS CHOSEN

Cellphones are used in good way and also in a bad way. When the class is going on, students intend to use their cell phones and not listening to what is being taught. These days, students are also carrying their cellphones to the examination halls to copy which would help them to get good marks.

To avoid this problem, the cellphone detector is introduced.

V. IMPORTANCE CELL PHONE DETECTOR

The use of cell phone detector is to ensure the safety of examination halls, meetings by detecting the presence of mobile phones and prevent the use of cell phones. It can be used for detecting mobile phones used for spying and unauthorized transmission of audio and video. It also can be used to detect stolen mobile phones.

VI. LIST OF COMPONENTS

- Resistor- 2.2 m Ω , 100 k Ω , 1 k Ω
- Capacitor- 0.22 μ F, 100 μ F, 47 μ F
- Transistor- BC 548
- OP Amp- CA 3130
- LED
- Battery
- Connection wire

VII. SIMULATION OF CELL PHONE DETECTOR

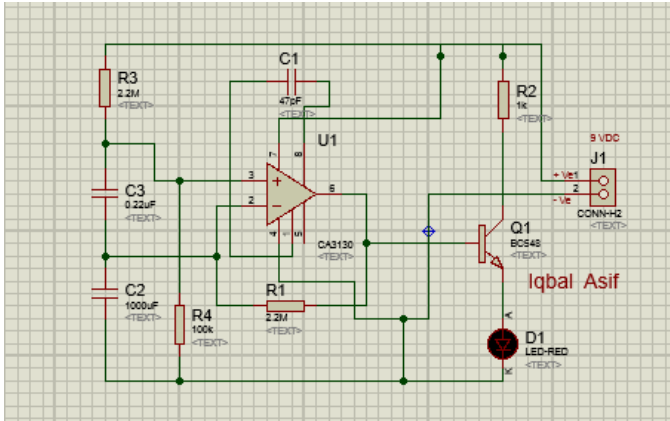


Figure 1: Connection Diagram of cell phone detector

The principle behind this circuit is the idea of using a Schottky diode to detect the cell phone signal. Mobile phone signal is in the frequency range of 0.9 to 3GHz..

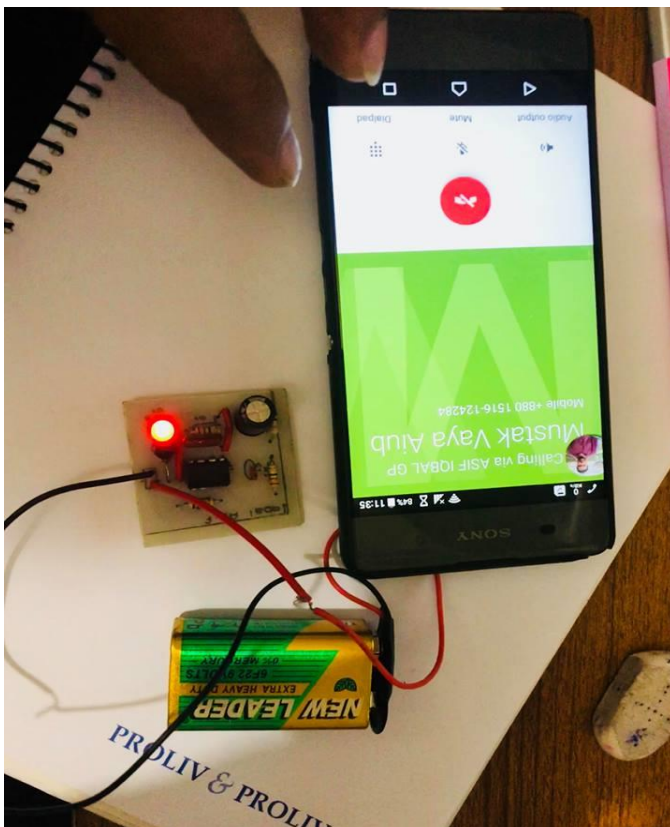


Figure 2: Connection Diagram of cell phone detector

Schottky diodes have a unique property of being able to rectify low frequency signals, with low noise rate. When an inductor is placed near the RF signal source, it receives the signal through mutual induction. This signal is rectified by the Schottky diode. This low power signal can be amplified and used to power any indicator like an LED in this case

COST ANALYSIS

Equipment name	Quantity	Price
Resistor	4	5
Capacitor	3	3.75
Transistor	1	2
OP Amp	1	60
LED	1	1.25
Battery	1	25
Connection wire	4 SET	15

VIII. LIMITATION OF WORK

It is a low range detector, of the order of centimeters. The Schottky diode with higher barrier height is less sensitive to small signals. It can be distract from radio signals.

IX. FUTURE SCOPE

Trying to increase the detecting range of cell phone detector to few more meters for observing wide range of area.

DISCUSSION AND CONCLUSION

This pocket-size mobile transmission detector or sniffer can sense the presence of an activated mobile phone from a distance of one-and-a-half meter. So it can be used to prevent use of mobile phones in examination halls, confidential rooms. In this circuit we use some basic terminology and concept of electrical and electronics engineering and some simple equipment. As experiments are never dies and ideas are never stops so there also a possibility of improvement in this system.

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