

HIDDEN ACTIVE CELL PHONE AND CAMERA DETECTOR

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ABSTRACT-In our day to day, the usage of mobile phone and camera can be increased in restricted places. The main scope of the project is to sense the presence of an activated mobile phone and camera from a distance of 10 meters to prevent the use of same in the examination halls. This detector is used to find the mobile and cameras in restricted places like examination halls, theatres, trial rooms etc., The radio frequency signals are transmitted from wireless camera and mobile phone during video transmission, sharing messages, taking snaps, incoming & outgoing calls. The detector will detect the transmitted signal and it is given to the microcontroller. After receiving the signal, the microcontroller turns on the beep alarm and the information is displayed on the LCD. It is used to detect activated mobile phones and wireless camera by the RF signals which are transmitted.

Keywords: AT89S52 Microcontroller, RF transmitter, RF receiver, LCD module.

I. INTRODUCTION

In recent years, there have been increasing issues for the use of mobile phones and camera in restricted areas. The mobile phone provides many ways for a student to cheat in an examination hall. One of the existing approaches is to ensure the students are free of mobile phones in examination hall by manual inspection in the entrance. Manual inspection cannot fully reveal the students having mobile phones all the time. These devices will ensure the connectivity between a student sitting inside the hall and outside the invigilator. They can exchange information such as question and answer through WhatsApp, Email and other social media. The mobile phones are strictly prohibited inside the examination room. Many applications installed on the mobile phone allow a student to commit cheating. The hidden camera, eavesdropping microphones etc., which are used in an illegal way like the trial room, hotels. To avoid this crime we decide to develop this project. This circuit can detect the signals during video transmission, incoming and outgoing calls, messages which are transmitted from one device to another. This detector detects the RF signal and sends the received signal to the microcontroller and the information is displayed on the LCD display like hidden camera detected along with the beep alarm.

II. PROBLEM STATEMENT

Despite the frisking of students before they enter into examination halls, some manage to smuggle mobile phones into the halls. Most phones have high definition cameras and can read PDF documents. So, class notes are easily accessed during the examination. The same can also be shared via Bluetooth, Wi-Fi and messaging. The issue of hidden cameras at public places is very paramount these days. These cameras are secretly put up in changing rooms, theatres and many other places which pose a major threat to the privacy of people. Movie shows as soon as they are released are recorded before the actual legal CD's are made available in the market leading to huge losses for the actual owner. Searching for covert cameras is no easier a job. Manually checking their presence is almost impossible.

III. LITERATURE SURVEY

A. PRESENCE OF ACTIVE MOBILE PHONES AND HIDDEN CAMERA DETECTION-2017

The radio frequency signals transmitted from wireless camera and mobile phone during the video transmission, incoming call, outgoing call and text messages from one gadget to another. The detector detects the transmitted signal and is given as input to Arduino microcontroller. Arduino microcontroller receives the signal, it turns on the beep alarm and the information is displayed on the LCD. It is used to detect the mobile phones and the wireless hidden camera present in a room by the radio frequency signals which are transmitted.

B. PRESENCE OF ACTIVE MOBILE PHONES AND HIDDEN CAMERA DETECTION-2016

In our day to day live the usage of mobile phones has been increased in the restricted area. The radio frequency signals transmitted from wireless camera and mobile phone during the video transmission, incoming call, outgoing call, text messages from one gadget to another. The detector will detect the transmitted signal and it is given as input to AT mega 8 microcontrollers. It receives the signal, it turns ON the beep alarm and the information is displayed on the LCD also sends the message like mobile detected with the location, room number to the mobile number stored in the microcontroller by using the GSM module. It is used to detect the mobile phones and the wireless hidden camera present in a room by the radio frequency signals which are transmitted.

C. MOBILE PHONE DETECTOR USING OP-AMP

This handy, pocket-size mobile transmission detector or sniffer can sense the presence of an activated mobile phone from a distance of one-and-a-half meters. So it can be used to prevent the use of mobile phones in examination halls, confidential rooms. It is also used for detecting the use of mobile phone for spying and unauthorized 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.

D. MOBILE DETECTOR

The handy, pocket-size mobile transmission detector is used where the use of a mobile phone is strictly prohibited such as examination halls, confidential rooms. The cell phone detector circuit can sense the presence of an activated mobile phone from a distance of one-and-a-half meters. Even if the mobile phone is kept in the silent mode, the circuit can detect the incoming, outgoing calls, SMS and video transmission. The moment the bug detects RF transmission signal from an activated mobile phone, it is detected and notifies the authority. The transmission frequency ranges 0.9-3 GHz. The use of mobile phone for spying and unauthorized video transmission can be easily detected.

E. DESIGN AND DEVELOPMENT OF MOBILE PHONE SIGNAL DETECTOR

The design and development of a digital signal detector which is capable of detecting incoming and outgoing signals from mobile phones. The presence of an activated mobile phone can be detected by the handy, pocket-size mobile signal detector from a distance of one and a half meters, for preventing the use of mobile phones in restricted areas. It is also suitable for detecting the use of a mobile phone for spying and unauthorized video transmission. It detects the incoming calls, outgoing calls, text messages, and video transmission even if the mobile is kept in the silent mode. The moment the gadget detects Radio Frequency (RF) transmission signal from an activated mobile phone, it starts sounding a beep alarm and the Light Emitting Diode (LED) blinks. The alarm continues until the signal transmission ceases. It is assembled on a general purpose PCB as compact as possible and enclosed in a small box.

F. THE DESIGN AND IMPLEMENTATION OF A MOBILE PHONE DETECTOR DEVICE WITH A FREQUENCY JAMMING FEATURE

In the development of ways to reduce malpractices in examination centers in all educational institutions is an important area of research. One of the major problems discovered aiding malpractices has been the creation of mobile phones, which however is a good communication device but needs to be curtailed during examinations. In order to have a 100% assurance that no student can cheat with his or her mobile phone a mobile detector system with a frequency jamming feature was developed using mobile cell phone detection techniques of measuring a cell phone's electromagnetic properties, determining an identifiable signature, measuring the RF spectrum and meeting the jamming requirements.

IV. BLOCK DIAGRAM

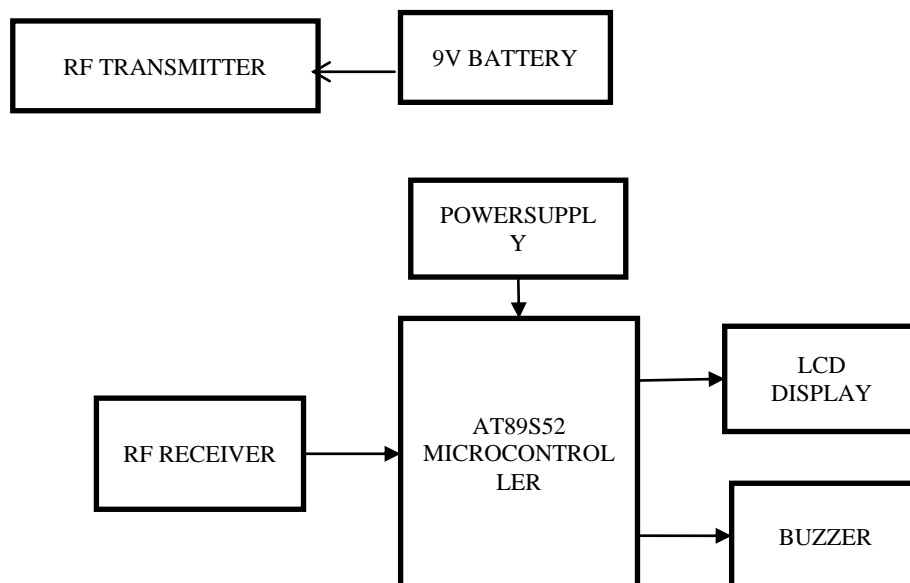


Fig 1. Block diagram

V. HARDWARE DESCRIPTION

A. RF TRANSMITTER

When the mobile phone is active, it transmits the signal in the form of a sine wave which passes through space. The encoded audio/video signal contains electromagnetic radiation. Mobile phone uses high-frequency RF wave in the microwave region carrying a huge amount of electromagnetic energy. Instead of a mobile phone, we are using the transmitter as a source to transmit the RF signal.

B. RF RECEIVER

A radio receiver is an electronic device that receives radio waves and converts the information carried by them to an AT89S52 microcontroller.

C. AT89S52 MICROCONTROLLER

The AT89S52 is a low-power, high-performance CMOS 8-bit microcontroller with 8K bytes of in-system programmable Flash memory. It is low power consumption. It receives the information from the receiver and is displayed on the LCD display.

D. POWER SUPPLY

A power supply is an electrical device that supplies electric power. The primary function of a power supply is to convert electric current from a source to the RF transmitter.

E. PIEZZO BUZZER

Piezo buzzer is made from conductors that are separated by Piezzo crystals. When a voltage is applied to these crystals, they push on one conductor and pull on others. The result of this push and pull is a sound wave. When the information is displayed on the LCD display, the buzzer will alarm.

VI. EXPLANATION

RF transmitter transmits the RF signal. The RF receiver detects the RF signal ie.434 MHZ. The RF receiver detects the RF signal from mobile phones and camera during incoming calls, outgoing calls, and video transmission. When the receiver detects the RF signal, the buzzer alarms and the information displays in LCD.

VII. RESULTS AND DISCUSSION

In our day to day live the usage of mobile phones has been increased in the restricted area. Despite the frisking of students before they enter into examination halls, some manage to smuggle mobile phones into the halls. Most phones have high definition cameras and can read PDF documents. The issue of hidden cameras in public places is very paramount these days. These cameras are secretly put up in trial rooms, theatres and many other places which pose a major threat to the privacy of people. Searching for covert cameras is no easier a job. Manually checking their presence is almost impossible. So to avoid these we decide to choose “HIDDEN ACTIVE CELL PHONE AND CAMERA DETECTOR” project. In this project, the RF receiver detects the RF signal from the mobile phones and the hidden wireless camera when they are ON. When the receiver detects the signal the buzzer alarms and the information displays in LCD. It detects within 10- meter distance. This detector is used in some restricted areas such as Examination halls, Spying and unauthorized video transmission, Hospitals, Theatres, Conferences, Historical places etc..

Trying to detect the signals, shown in Fig 2



Fig 2. Trying to get signals

If the device detected the RF signals, the result be shown in Fig 3



Fig 3. Result

VIII. CONCLUSION

RF receiver detects the RF signal from the mobile phones and the hidden wireless camera during incoming calls, outgoing calls, messages and direct video transmission from one device to another with the alert system. This continuously monitors the RF level within a room. If the RF signal level increases a warning alert through buzzer is implemented along with message is displayed through the LCD display as "HIDDEN CAMERA DETECTED". Mobile technology and wireless camera gain new data capabilities rapidly. Features like the direct transmission of video from the small wireless camera to other devices. Many institutions depend on keeping information secured to build fortresses imploring methods to check everyone. It requires a lot of manpower. RF receiver receives the signal within a 10-meter radius to prevent the malpractices in restricted areas.

IX. FUTURE SCOPE

Planned to improve the detecting level for upcoming 5G signals and also using the GSM, GPS to find the exact location of the user.

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