

Cell Phone Detector

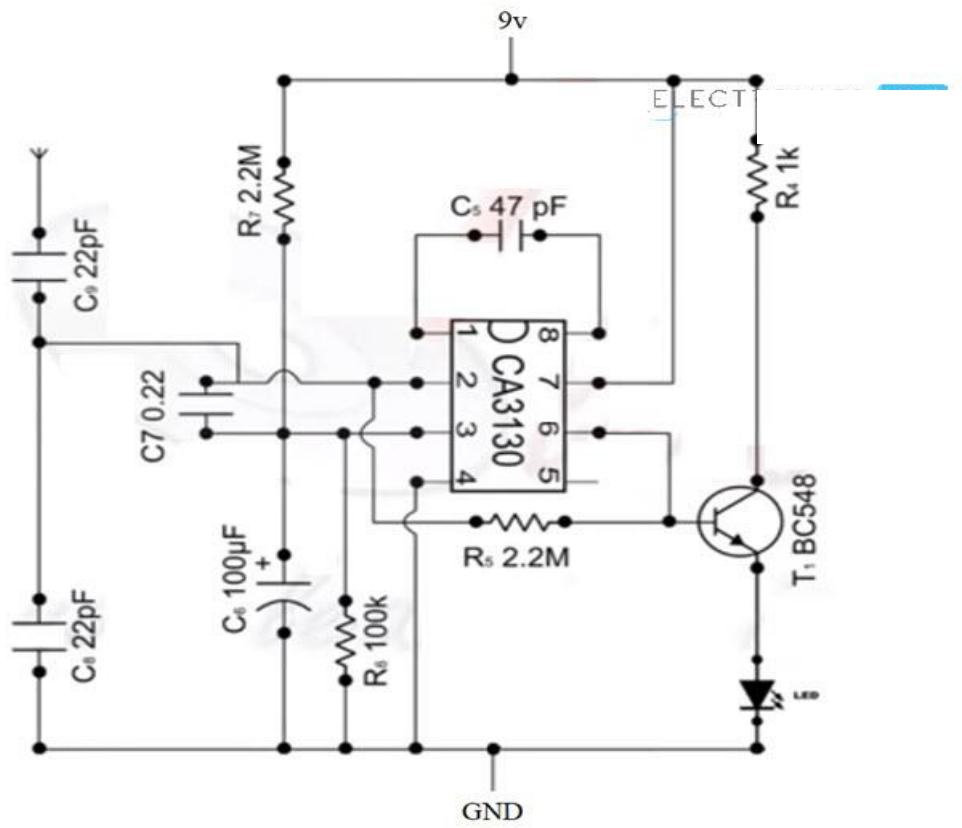
Abstract

The basic principle behind the Cell Phone Detector circuits is to detect the RF Signals. In the Schottky diode circuit, the Schottky Diode is used to detect the cell phone signal as they 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.

Introduction

The most common electronic equipment used now-a-days is Cell Phone or Mobile Phone. With advancement in communication technology, the requirement of cell phones has increased dramatically. A cell phone typically transmits and receives signals in the frequency range of 0.9 to 3GHz. This article provides a simple circuit to detect the presence of an activated cell phone by detecting these signals.

Circuit diagram



Component Required

- Op-Amp CA3130
- 2.2M resistor
- 100K resistor
- 1K resistor
- 100nF capacitor
- 22pF capacitor
- 100uF capacitor
- 9Volt Battery
- LED
- Transistor BC547
- Connecting wires
- Antenna
- Battery Connector

Working

- This circuit consist an op-amp with some active passive components.
- A LED is used for indication of presence of cellphone.
- Op-amp is configured as Frequency Detector or Current to Voltage Converter and its output is connected to a LED using NPN (BC547) transistors.

- The 100nF capacitors is used for detecting RF signal from Mobile Phone. These capacitors are working as loop antenna for the system.
- When there is any call then capacitors in parallel detect the data transmission frequencies or RF signal and output of op-amp goes high or low (fluctuating) due to generated current at the input side of op-amp.
- Due to these fluctuations, LED turns on and off through NPN transistor according to the signal's frequency.

Application

This Mobile Detector Circuit can detect incoming/outgoing calls, messaging, video transmission and any SMS or GPRS uses within the range of 1 meter.

This circuit is very useful to detect Cell-phones at Cell-phone restricted places like Exam halls, meeting rooms, hospitals etc.

It is also useful in detecting the unauthorised use or spying using hidden Cell Phone.