



**GOVT. ENGINEERING COLLEGE  
SREEKRISHNAPURAM**

**MINI PROJECT**

**MOBILE BUG**

# PRESENTED BY

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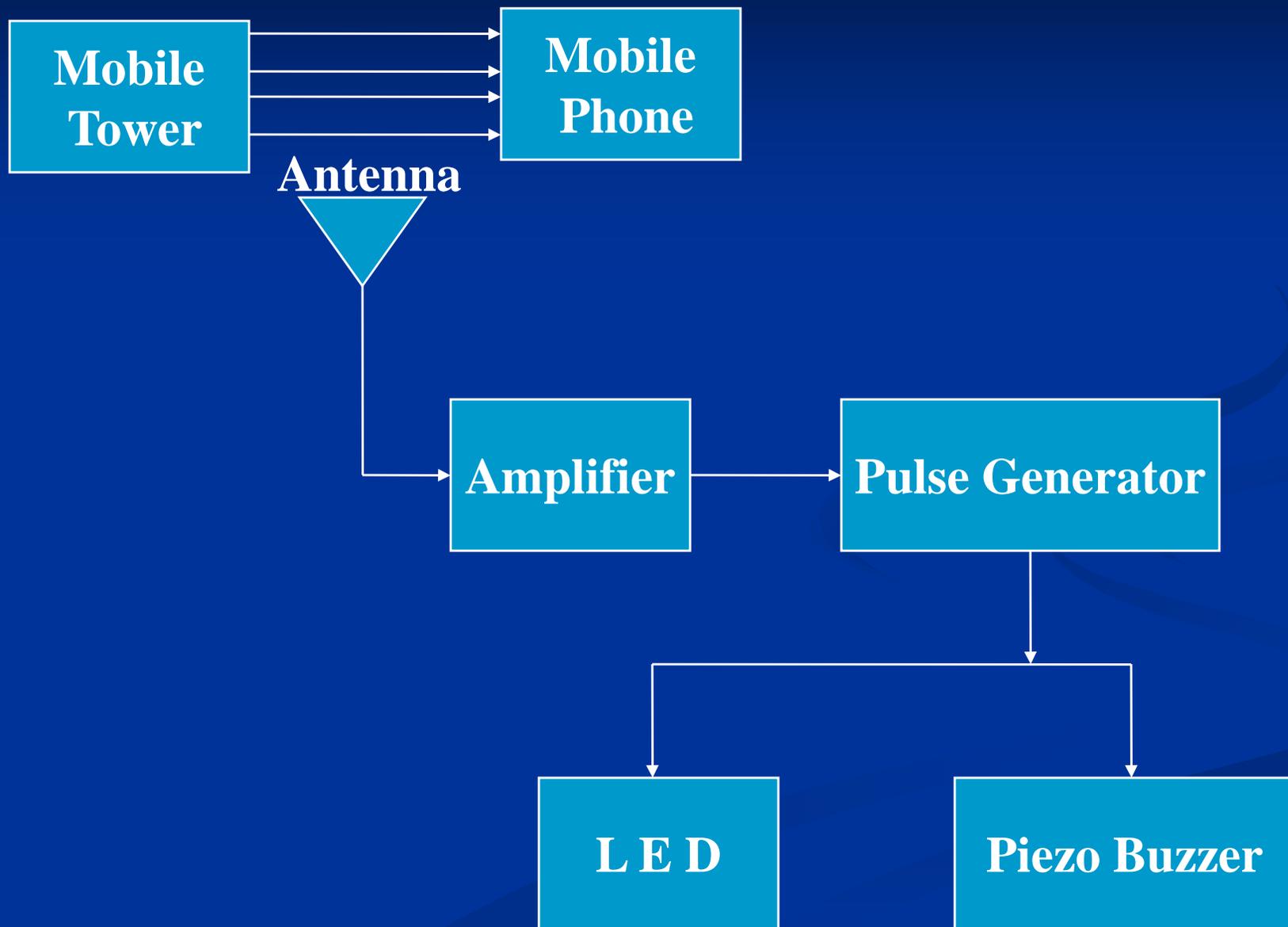
# ABSTRACT

- The project aims that handy pocket size mobile transmission detector can sense the presence of an activated mobile phone from a distance of 1.5 meter. So it can be used to prevent the use of mobile in examination-halls, confidential rooms, etc. it is also useful for detecting the use of mobile phone for spying and unauthorized video transmission.

# INTRODUCTION

- The last few years have witnessed a dramatic boom in the wireless communication industry, hence increasing the number of users of mobile communication device.
- This handy pocket size mobile transmission detector can sense the presence of an activated mobile phone from a distance of 1.5 meter. So it can be used to prevent the use of mobile 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 both 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.

# BLOCK DIAGRAM



# BLOCK DIAGRAM DESCRIPTION

- **Mobile Phone:**

A wireless communication device through which the RF signals are transmitted or received and whose presence is to be detected by the mobile detector.

- **Antenna:**

The antenna is used to sense the RF signals that is being transmitted or received through the mobile phones. Here the length of the antenna is 5-inches

- **Op Amp:**

The Op-amp used in the circuit functions as a current to voltage converter. The Op-amp output becomes high and low alternately according to the frequency of the signal detected from the mobile phone.

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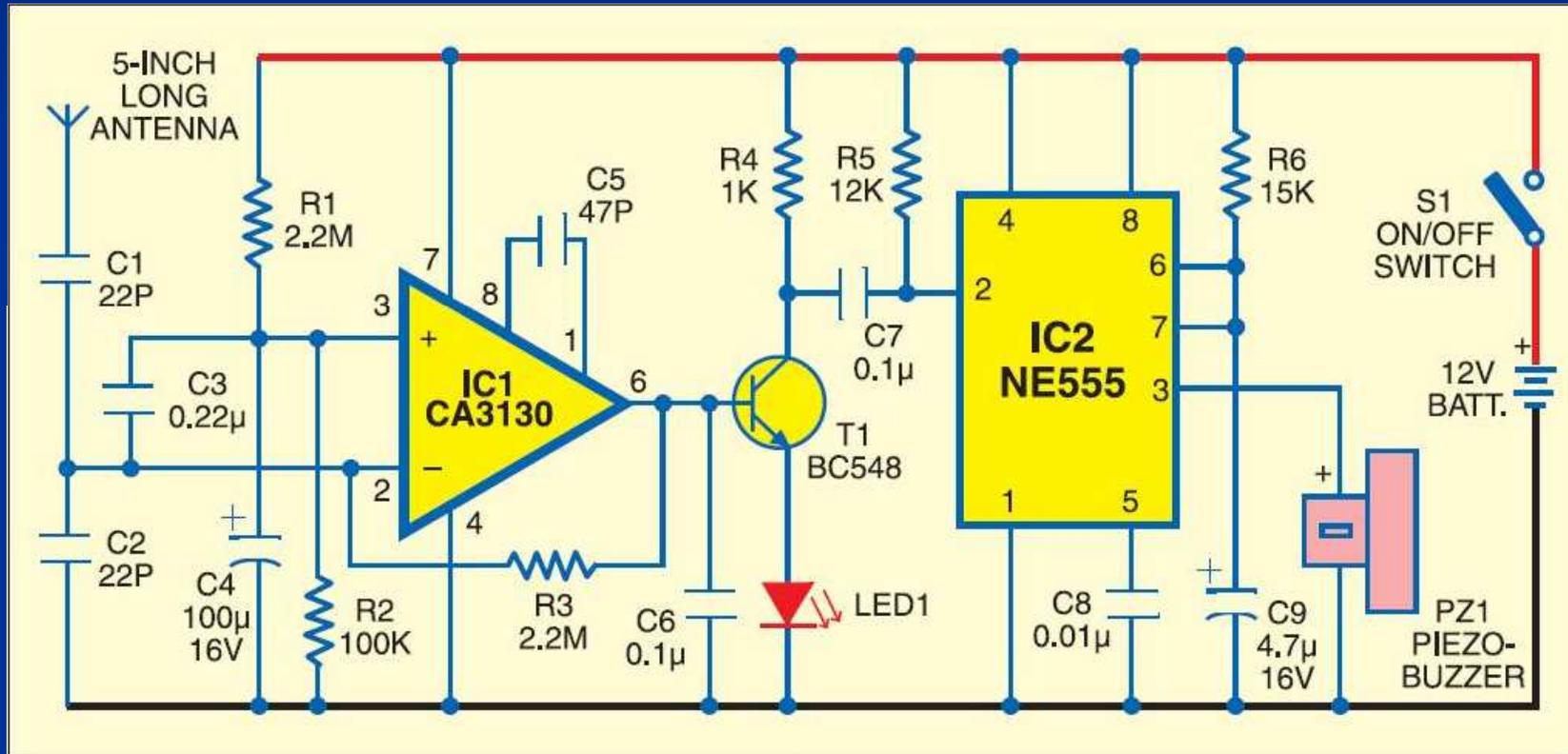
- **Monostable-Multivibrator:**

The output of Op-Amp triggers the Monostable-Multivibrator circuit and produces pulse waveforms as the output.

- **Piezo-Buzzer & L E D:**

The piezo-Buzzer produces sound when output of the RF detector section goes high and L E D blinks which in turn indicate the presence of the mobile phone

# CIRCUIT DIAGRAM



# WORKING

- The transmission frequency of the mobile phones ranges from 0.9GHz to 3GHz with wavelength of 3.3 to 10 cm. so a circuit detecting Gigahertz signals is required for a mobile bug.
- Here the circuit uses a  $0.22\mu\text{F}$  disk capacitor (c3) to capture the RF signals from the mobile phones.
- Op-amp CA3130 (IC-1) is used in the circuit as a current to voltage converter with capacitor (c3) connected between its inverting and non-inverting inputs.
- Capacitor (c3) in conjunction with the lead inductance act as transmission line that intercepts the signal from the mobile phone.

# APPLICATIONS

- Used to prevent the use of mobile phones in prohibited areas such as examination halls etc.
- Can sense the presence of a activated mobile phone from a distance of one –and –a-half meters and there by preventing the use of mobile phones in confidential room etc.
- This circuit helps us in preventing unauthorized video transmission and spying through the mobile phones.

# ADVANTAGES

- Small and compact in size.
- Portable and lightweight.
- Easy to handle and operate.
- Simple and easy to construct.
- Cost effective.
- Less power consumption.

# RESULT & CONCLUSION

- Handly mobile detector can sense the mobile signal from the transmission channel
- The mobile bug circuit can sense RF signals (in gigahertz) from a distance of one-and-a-half meters and enable us to prevent the use of mobile phones in the restricted areas such as examination halls, conference halls, spying and unauthorized video transmission.

# FUTURE SCOPE

- Its range can be extended to wide area.
- It can be modified to detect signals in a particular direction.
- The mobile bug designed here can be used to detect the presence of activated mobile phones and there by prevent the use of mobile phones in the restricted areas such as examination halls, conference halls, spying and unauthorized video transmission. Mobile bug incorporating 'MEMS (micro-electro-mechanical-systems)' technology and sensors can be used to detect the mobile phones at larger distances.

# USES

- The circuit can detect both 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.