

# Mobile Phone Detector based on Op Amp

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# Contents

What's all about?

Design & Implementaion

Limitations

What's Next ?

# Introduction

## Concept and Background



**What's all about?**

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## Problem



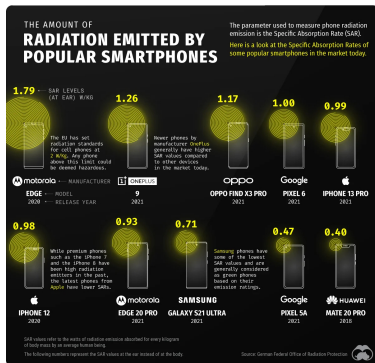
- Mobile phones are great tools, but they are bnned in some places.
- Detecting phones being around is important.
- Providing easy-to-use tools to detect phones.

# What's Being Detected ?

## Note

Almost all mobile phones emit EM radiation.

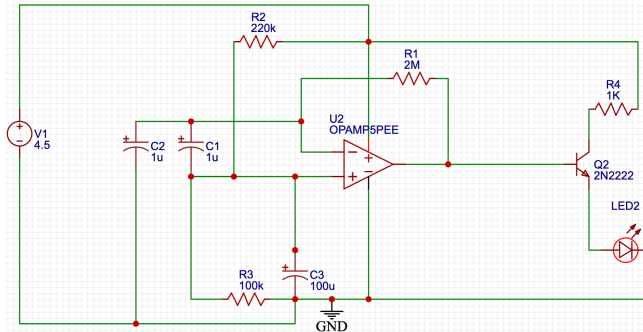
GSM, 2G, Searching for network, or SMS  $\sim 800$  MHz



# **Design & Implementaion**

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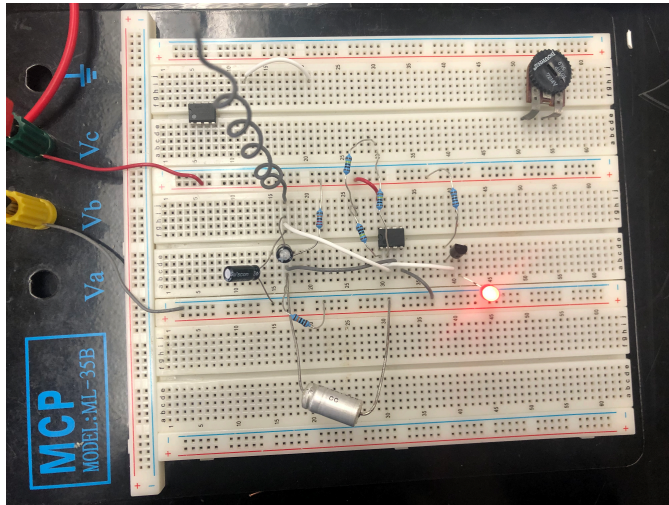
## Circuit Diagram



- LM358P Op Amp
- NPN Transistor
- LED & Buzzer
- Capacitors and resistors



## In-Lab Testing



## A Quick Demo



# Limitations

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## Limitations

- Very small coverage radius.
- Require antenna, and more tuning for is.
- Radiation-free workplace.
- Such circuits cannot be simulated.

**What's Next ?**

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# What's Next ?

Add gerber file

OR

Layers

1

2

4

6

Dimensions

100

 X 

100

 mm

Quantity

5

Instant Quote

**News:** Dec 2, 2022 JLCPCB High-precision Multi-layer PCB Extended L... →

### 1&2 layers

From **\$2** /Spots  
Build Time: 24 hours

- ✓ Only \$2 for 100x100mm PCBs
- ✓ \$56/㎡ for batch production
- ✓ FR4, Aluminum, Lead Free PCB

Quote Now

### 4&6 Layers

From **\$2** /Spots  
Build Time: 4 days

- ✓ 4 L - \$2 for 50x50mm PCBs
- ✓ 4 L - \$91/㎡ for Batch production
- ✓ 6 L - \$20 for 50x50mm PCBs

Quote Now

### PCB Assembly

From **\$8**  
Build Time: 24 hours

- ✓ 300,000+ In-stock Parts
- ✓ Free DFM File Check
- ✓ Exports JLCPCB Assembly

Quote Now

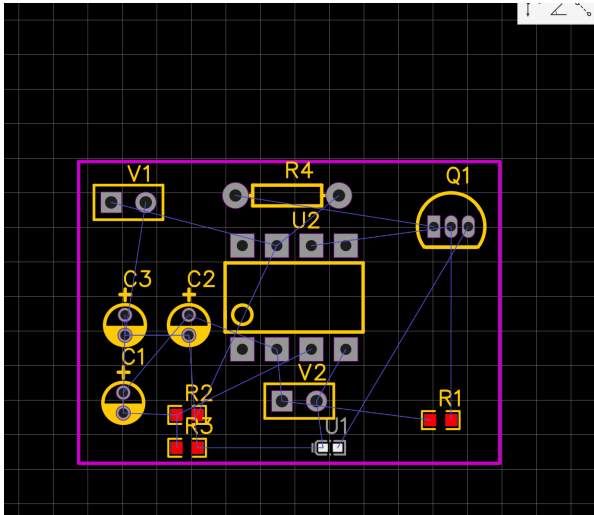
### 3D Printing

From **\$1**  
Build Time: 48 hours

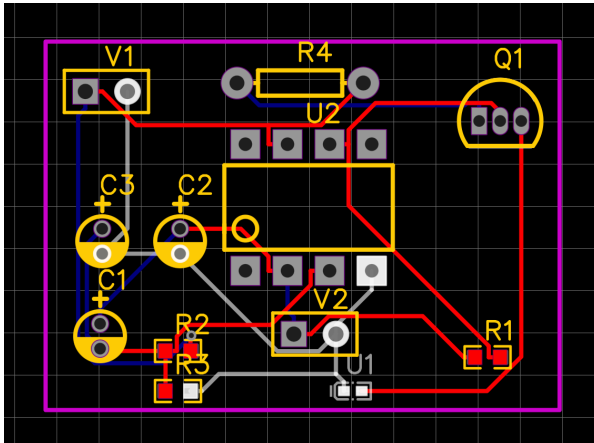
- ✓ Price as low as \$0.07/g
- ✓ SLA, M.F, SLM, FDM, SLX
- ✓ Resin, Nylon, Metal, ABS

Quote Now

# PCB Before Routing

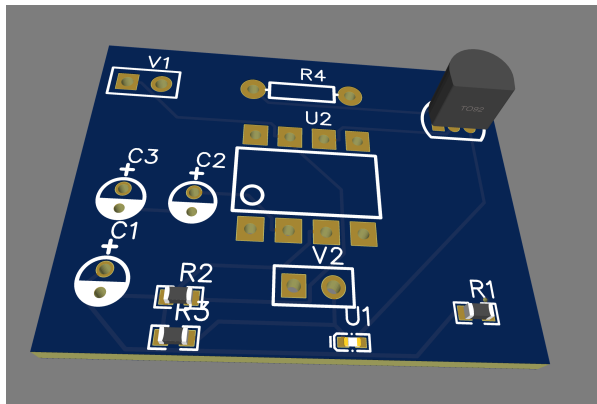


## PCB After Routing





## 3D View



## Conclusion

the mobile phone detector based on an op amp is an effective and low-cost project, to detect the existing of a mobile phone around via EM radiation emitted by the GSM signals.

**Thank you for listening!**

