ELECTRONIC PACKAGING

ASSIGNMENT REPORT

TEAM MEMBERS

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ROLL NO:- S20210020307

NAME:- Venkata Srinivas Reddy

ROLL NO:- S20210020302

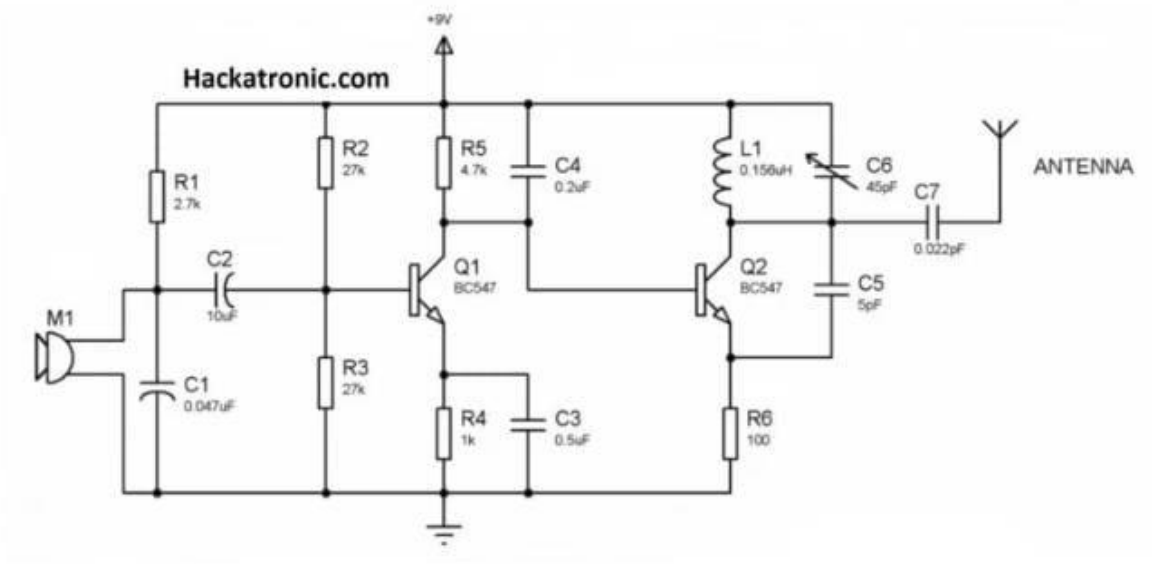
Objective: - Designing a schematic, layout and PCB of FM transmitter and receiver circuit using Eagle and Easy-Eda software.

FM Transmitter Circuit:-

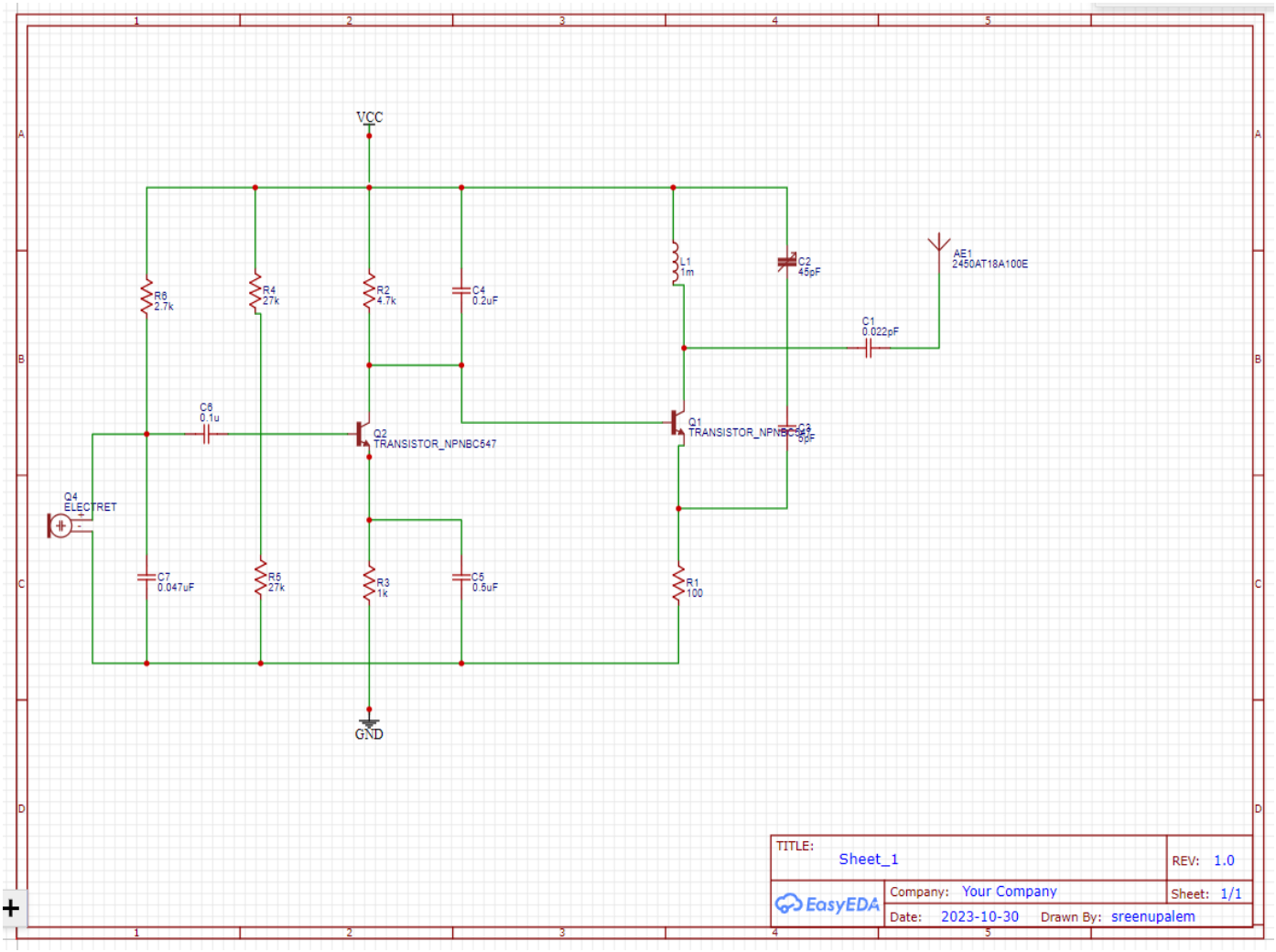
Modules Required:-

- R1 2.7k (1/4watt)
- R2,R3 27K (1/4watt)
- R4 1k (1/4watt)
- R5 4.7k (1/4watt)
- R6 100R (1/2watt)
- Capacitors(0.047uF,10uF,0.5uF,0.2uF,5pF,0.022uF)
- C6 variable capacitor 45pF
- Q1,Q2 BC547 (NPN Transistor)
- M1 microphone

Circuit:-

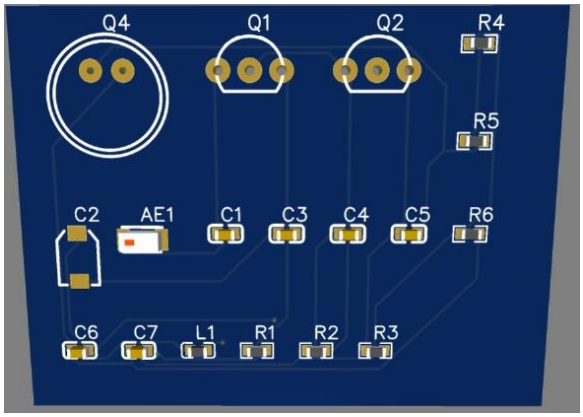


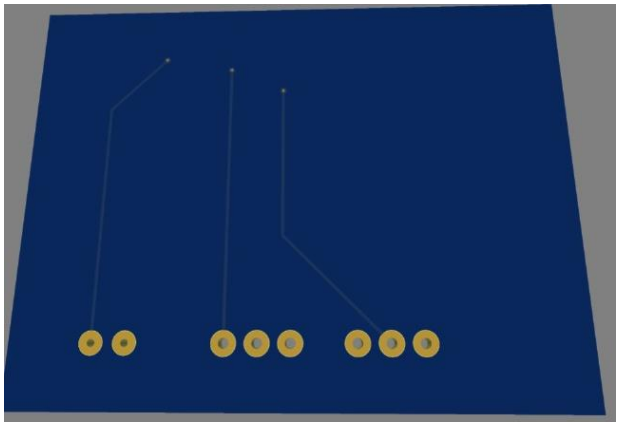
EasyEdA Software



PCB Design:-

2D View

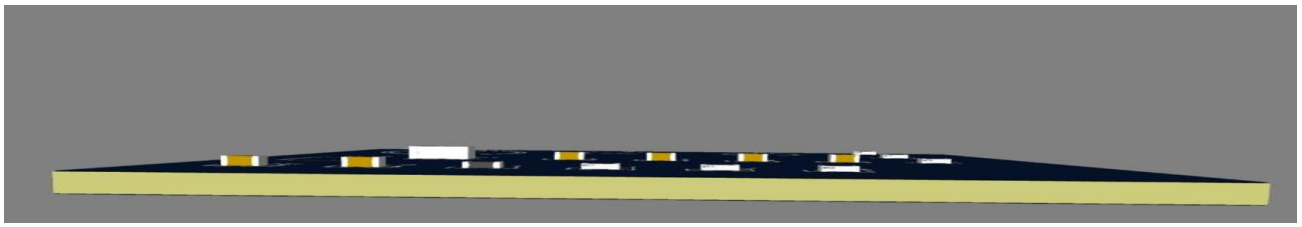


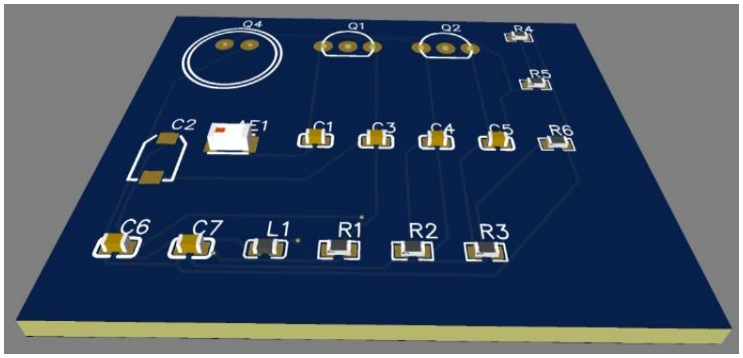


Top Layer

Bottom Layer

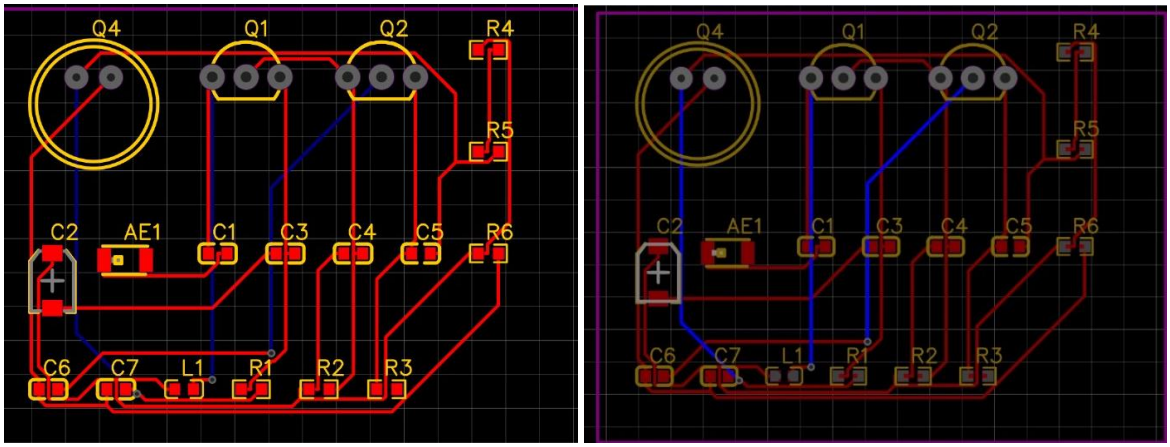
3D view





Front View | Back View | Cross View | Through view

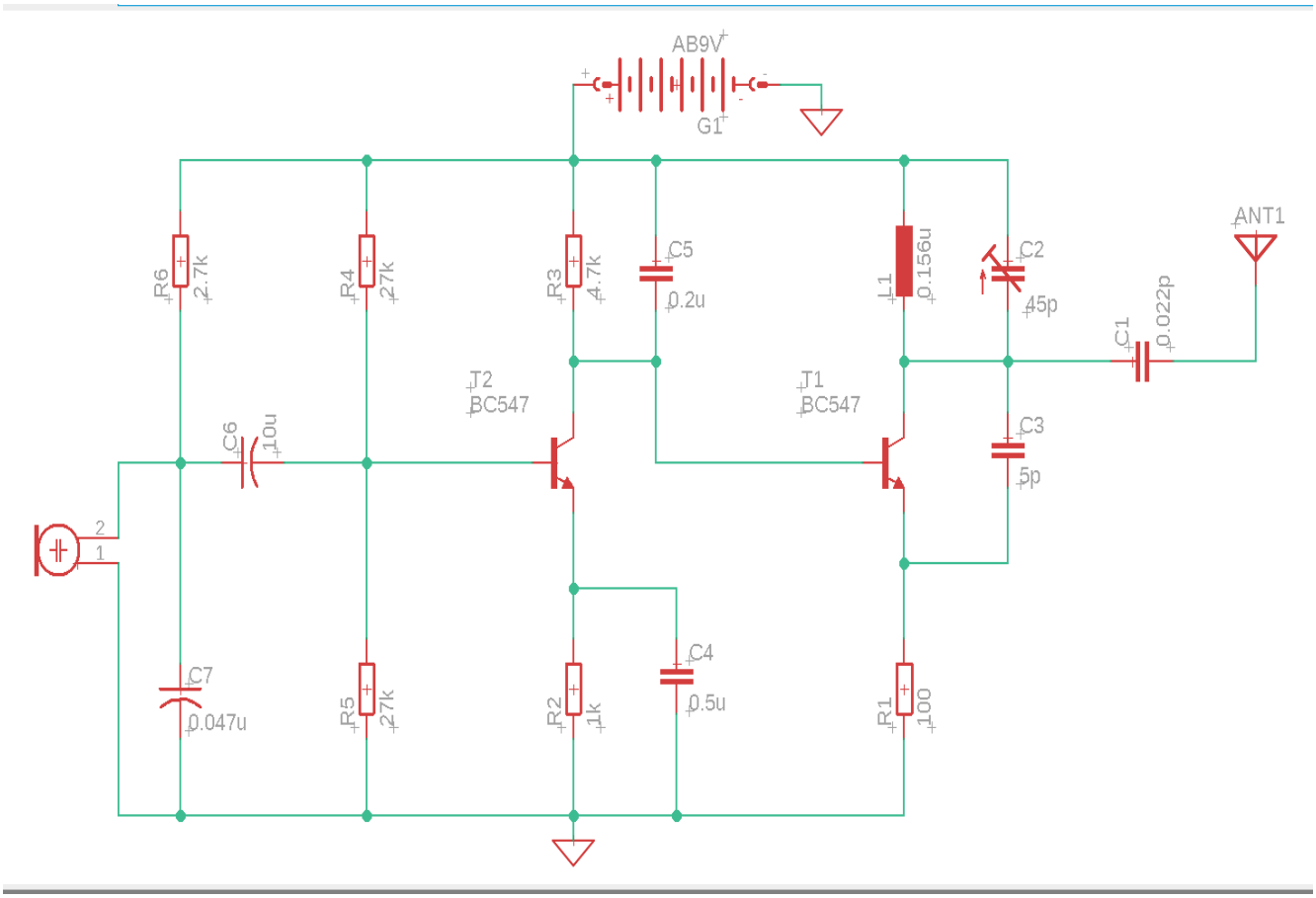
Types of common layers :-



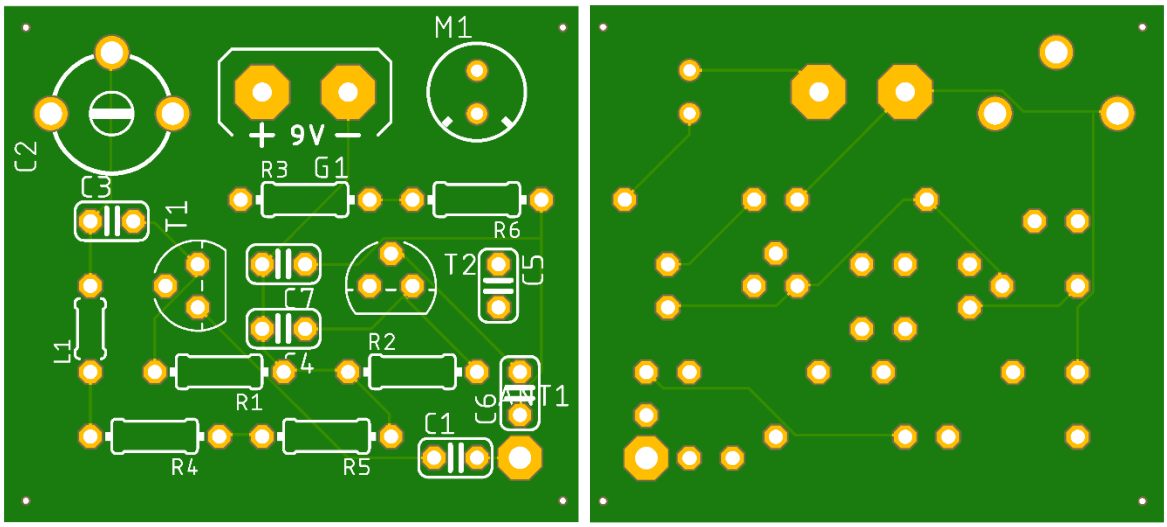
Top Layer Bottom Layer

Eagle Software

Schematic:-

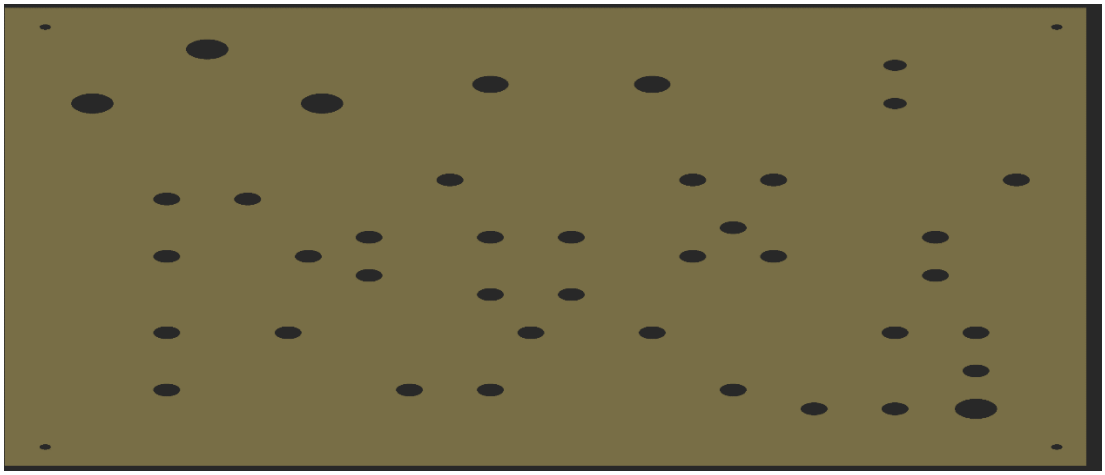


Board Design: -



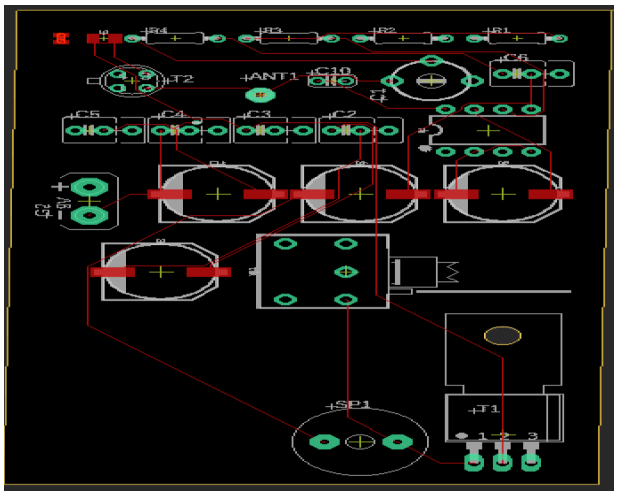
Top view

Bottom View

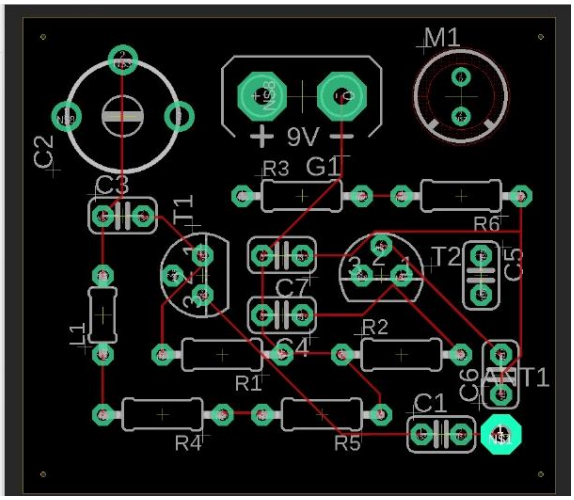


Drill View

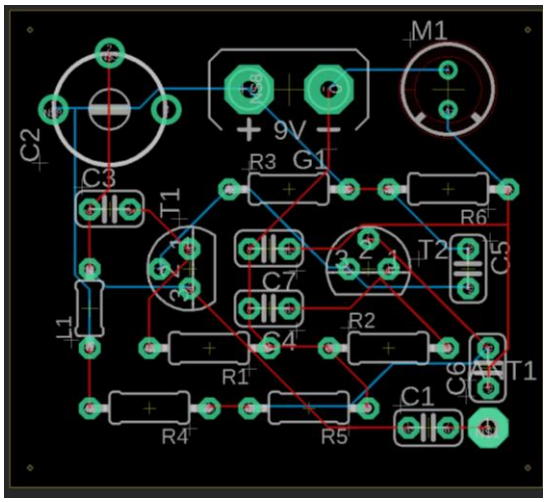
PCB Design: -



Top Layer



Bottom layer



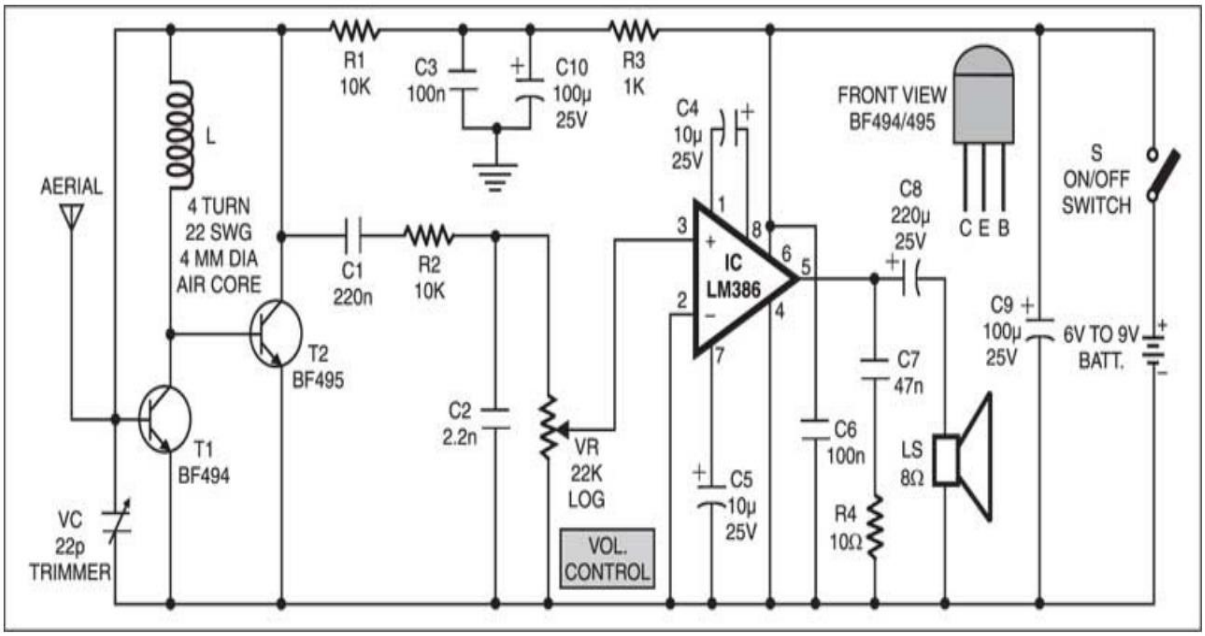
Merged Layer

FM Receiver Circuit :-

Modules Required :-

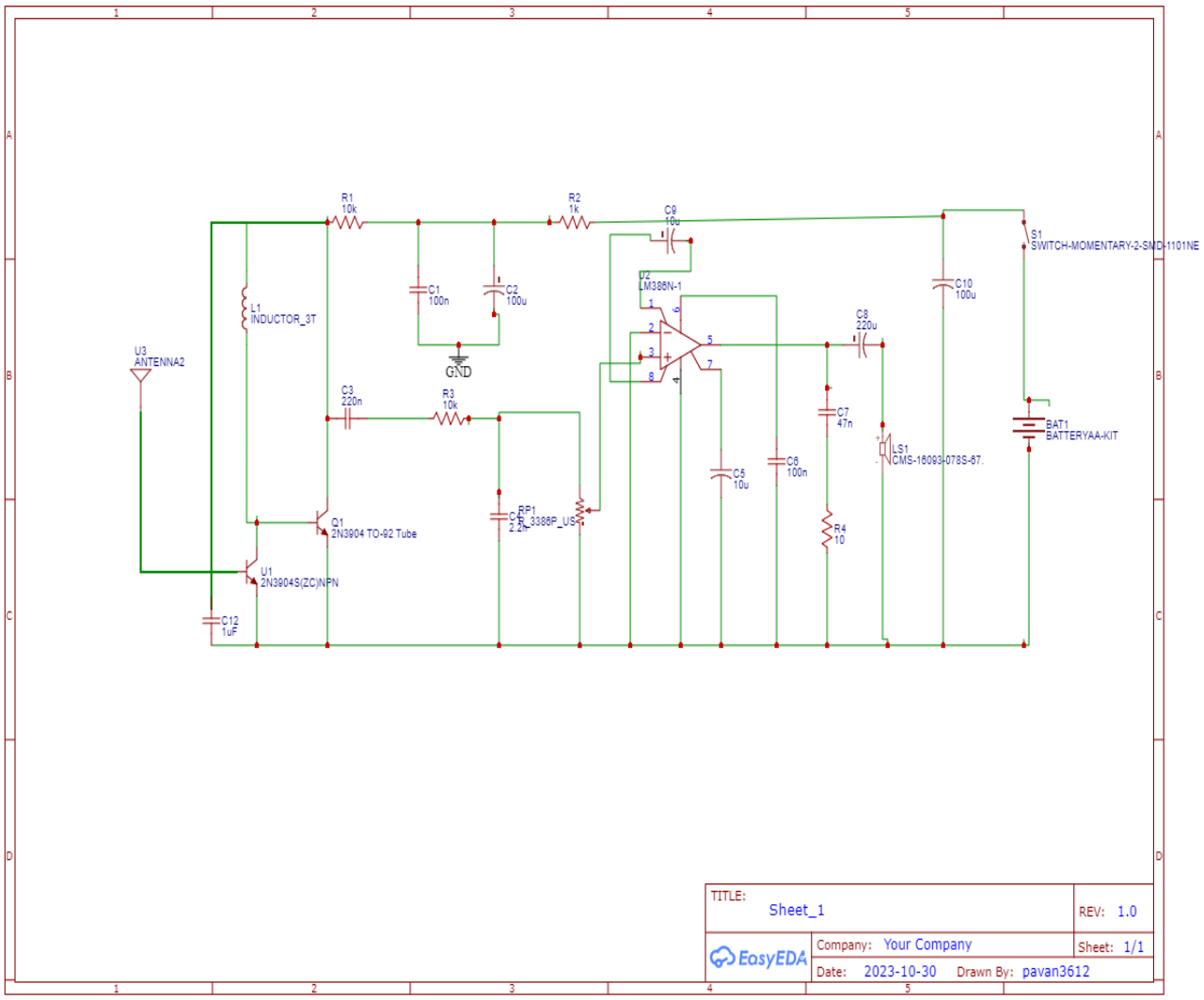
- IC- LM386
- T1 BF494
- T2 BF495
- 4 turn 22SWG 4mm dia air core
- Capacitors(220nF,2.2nF,100nF,10uF(25V),47nF,220uF(25v),100uF(25V)
- R 10KΩ * 2
- R3 1KΩ
- R4 10Ω
- Variable resistance
- Variable capacitance
- Speaker
- Switch
- Antenna
- Battery

Circuit:-



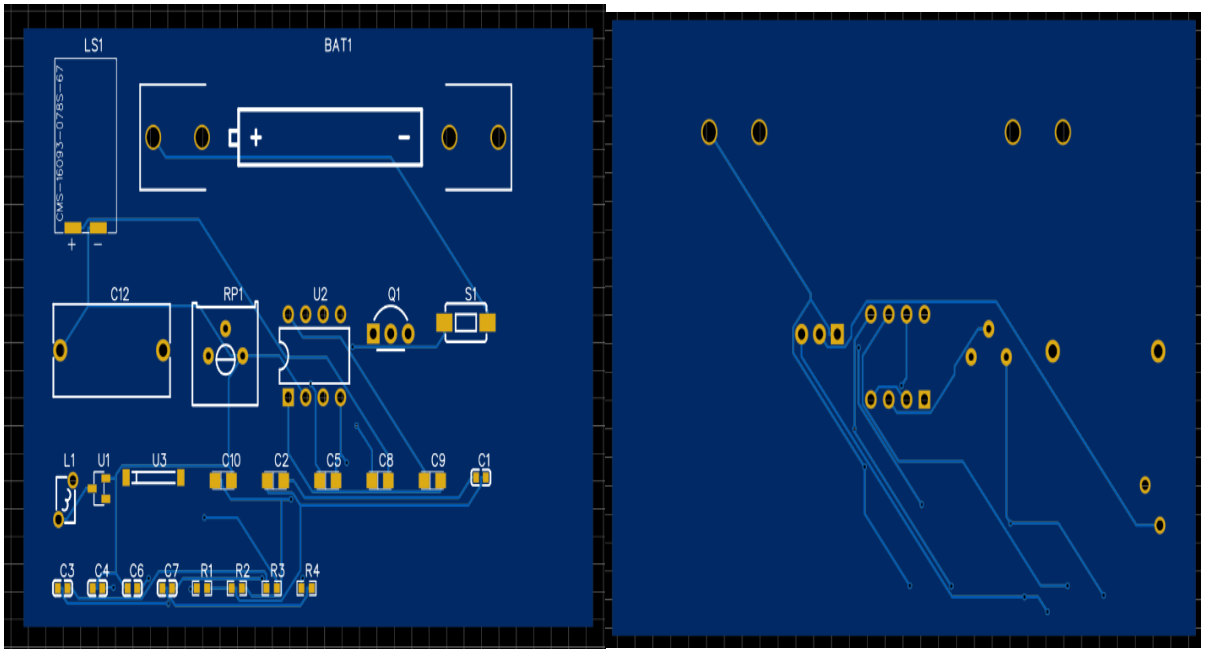
EasyEDA Software

Schematic:-



PCB Design:-

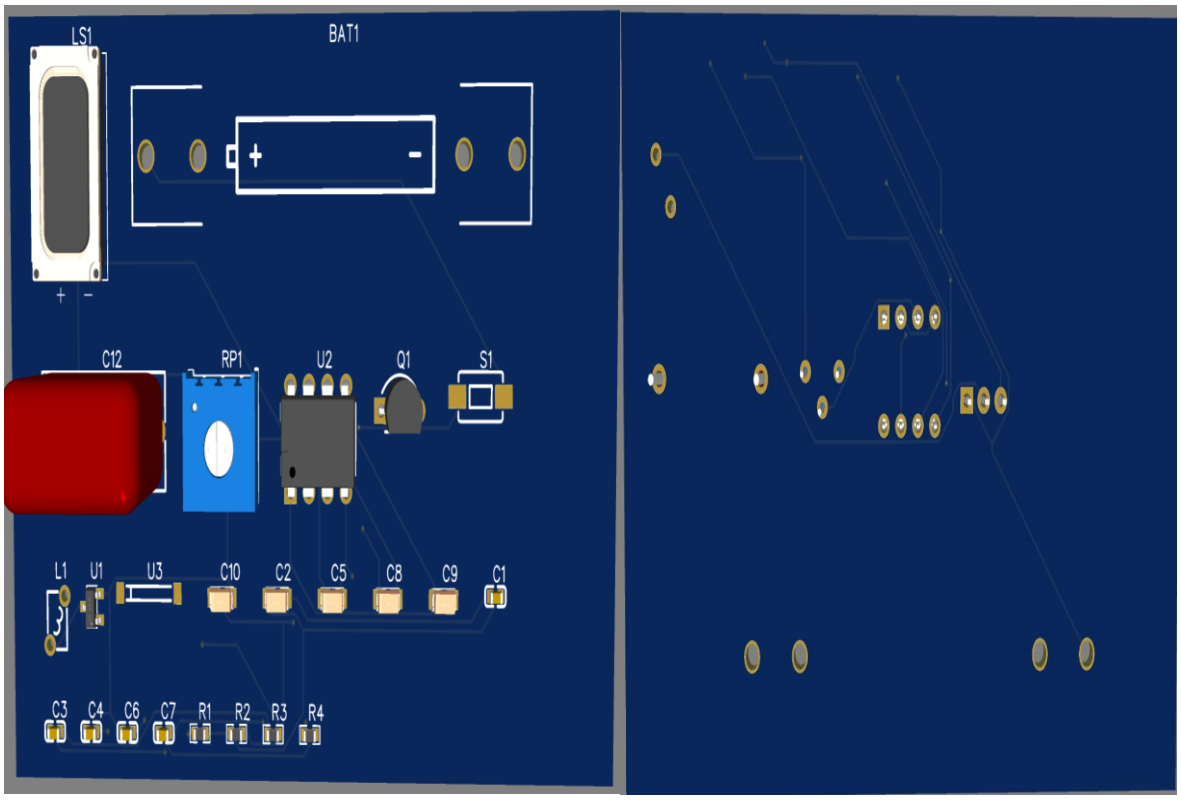
2D view

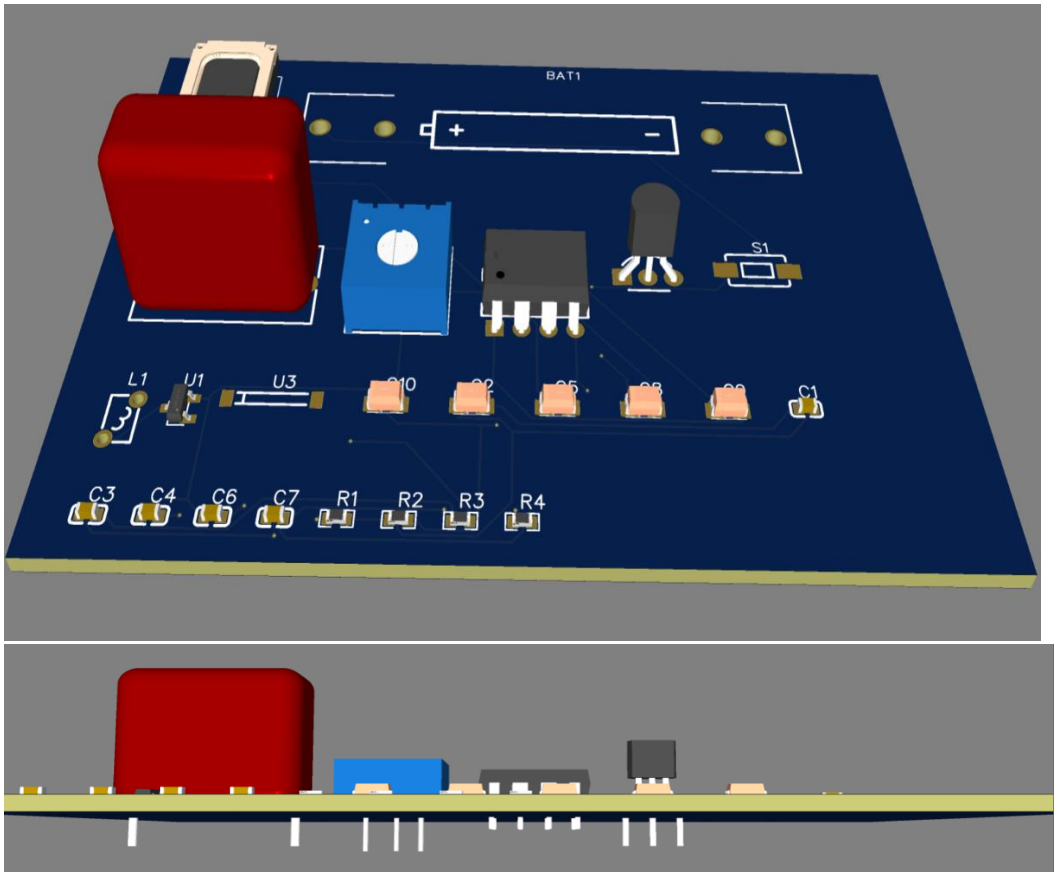


Top layer

Bottom Layer

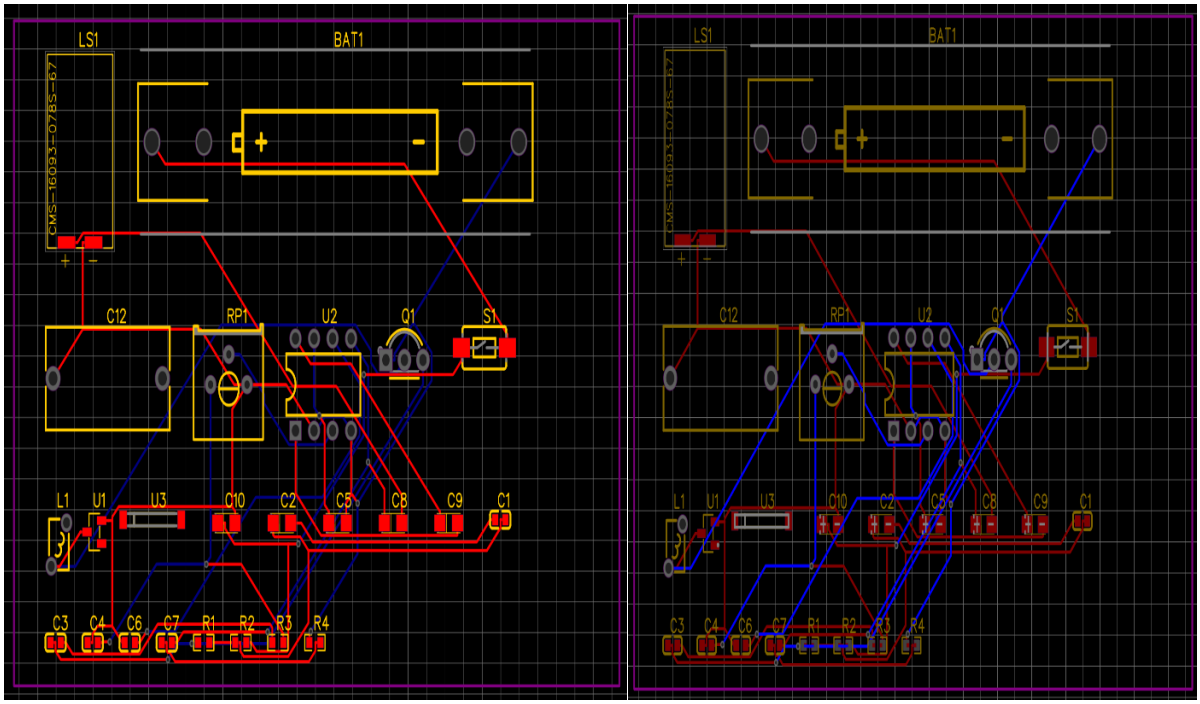
3D View





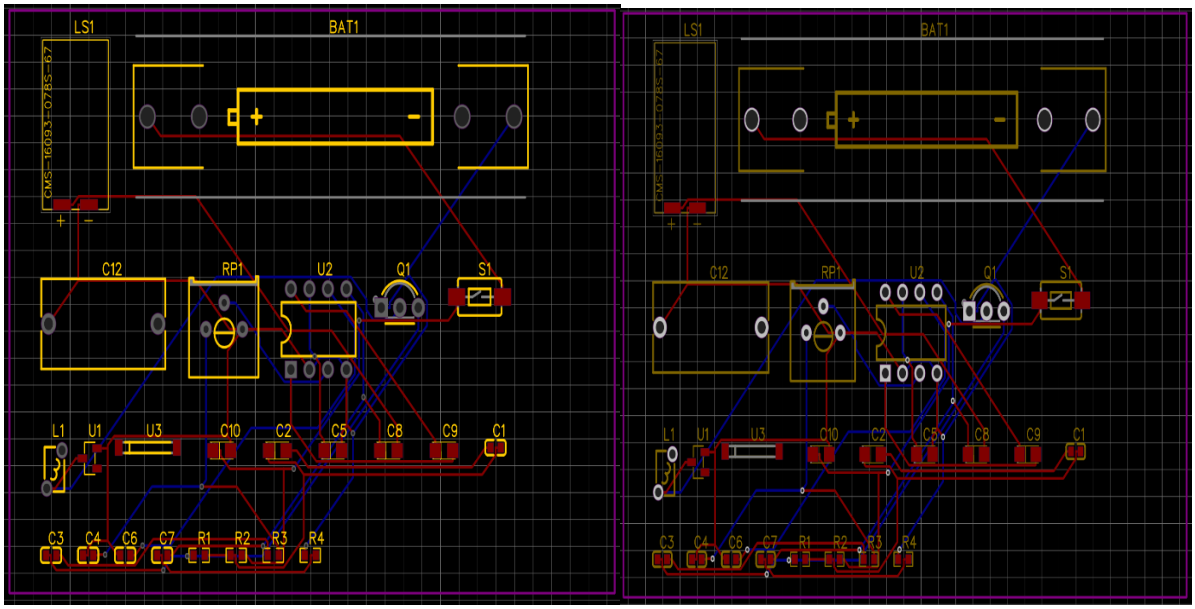
Cross view | Back view | Front view

Types of common layers: -



Top Layer

Bottom Layer

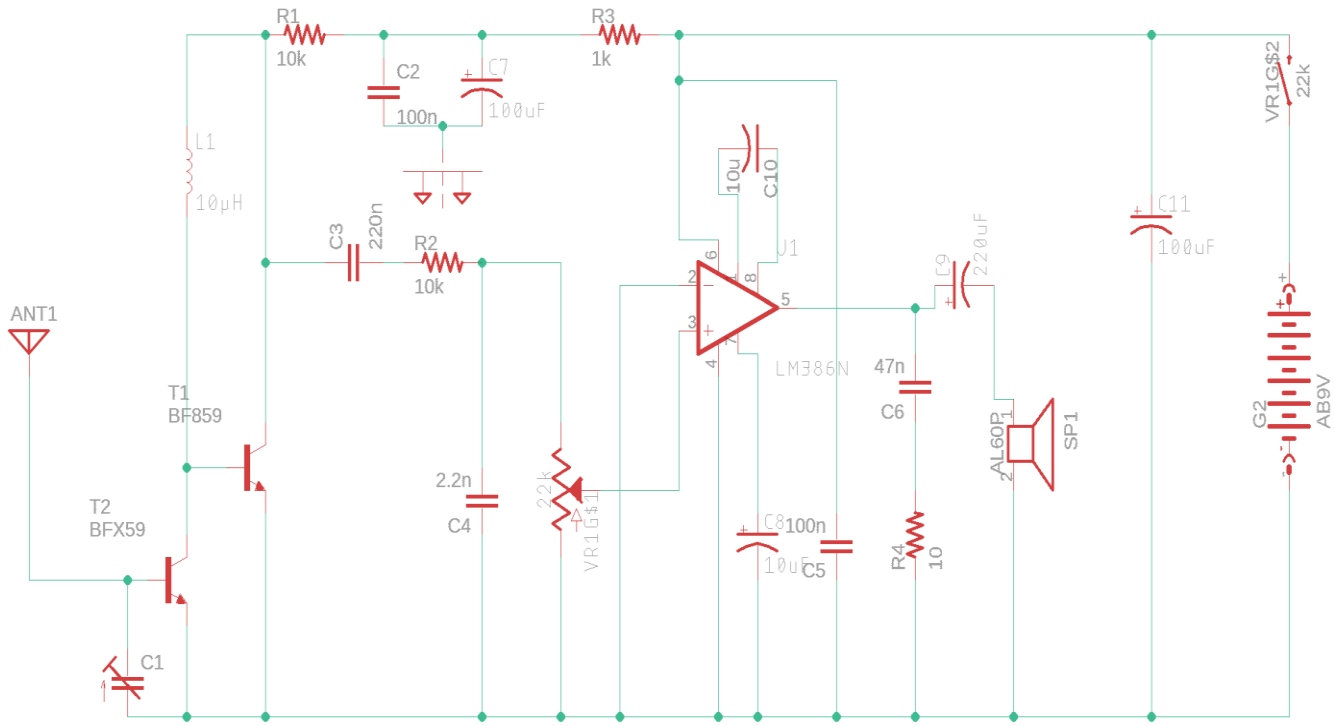


Top silk Layer

Multi Layer

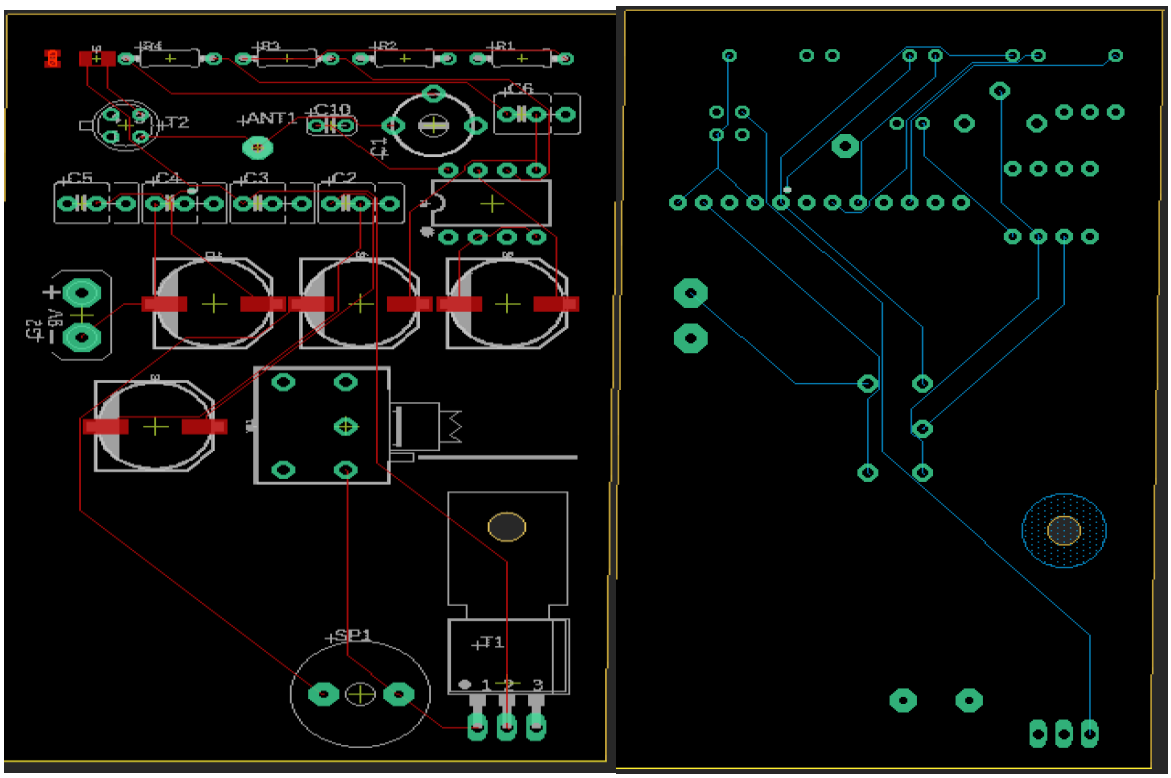
Eagle Software

Schematic: -



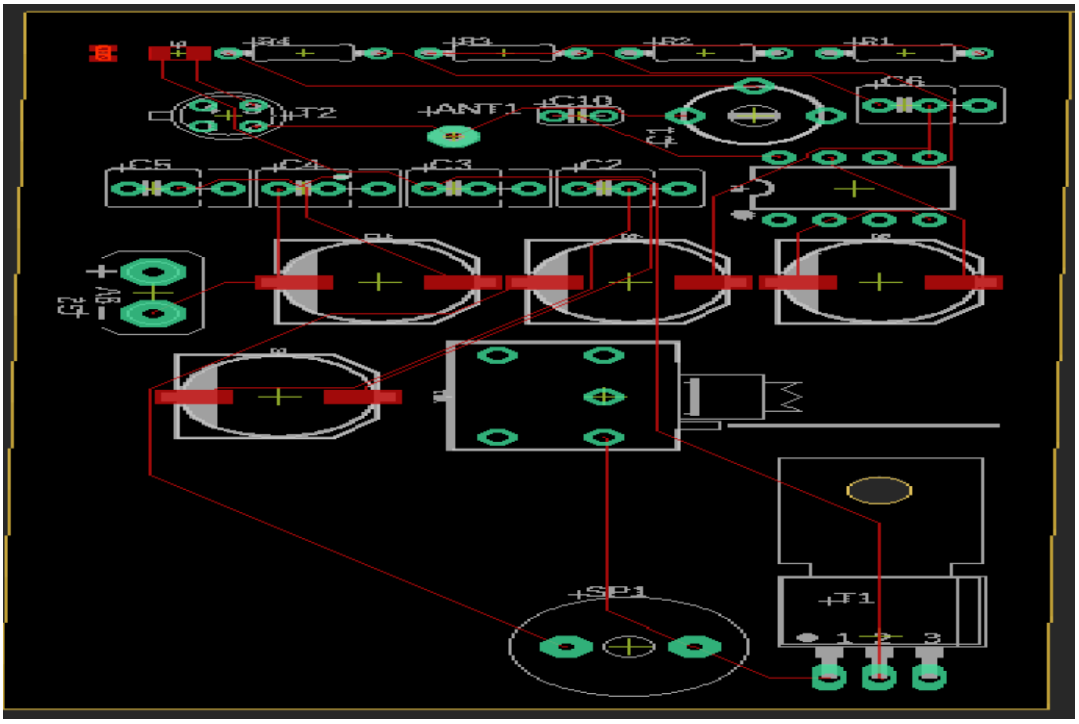
PCB Design:-

Layers:-



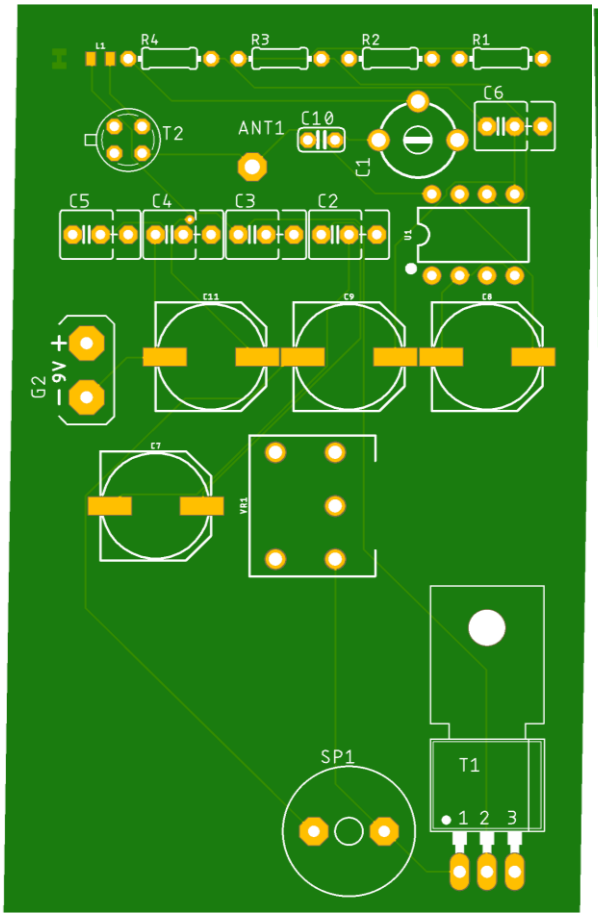
Top Layer

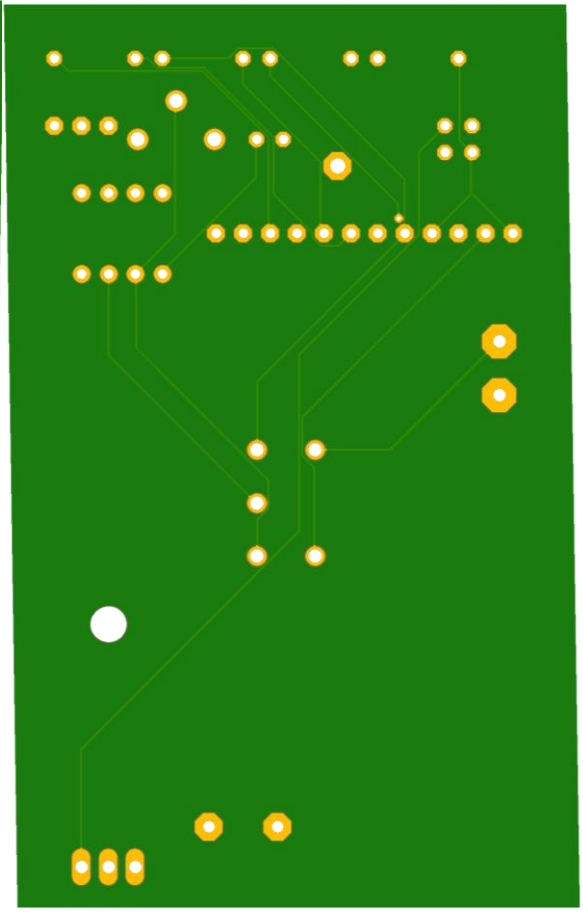
Bottom Layer



Merged Layer

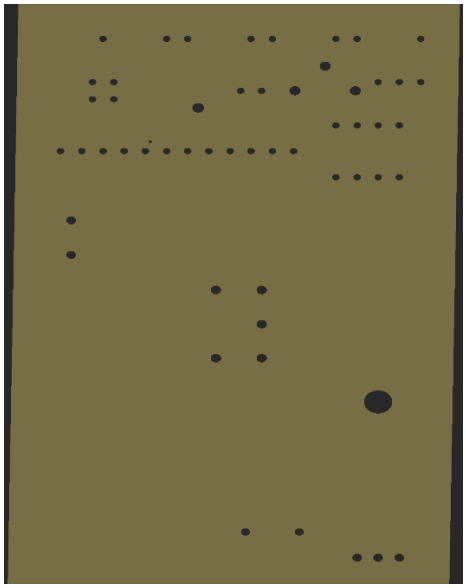
Board Design:-





Top View

Bottom view



Drill View

Measurements:- FM transmitter Circuit & FM receiver circuit

Types	EasyEDA(in mm)	Eagle(in mm)
Board width	44.56	33.96
Board Height	33.64	30.47
Board Area	1498.9	1034.76
Copper Layers	2	2
Board Thickness	1.6	1.57
Via Drill Size	0	0
Min.Copper Trace Width	0	0.15
Max. Drill Size	1.34	1.32
Min. Drill Size	0.30	0.35
ERC & DRC Errors	0	0

Types	EasyEDA(in mm)	Eagle(in mm)
Board width	55.13	54.28
Board Height	83.18	85.08
Board Area	4585.7	4510.09
Copper Layers	2	2
Board Thickness	1.48	1.57
Via Drill Size	0	0
Min.Copper Trace Width	0	0.2
Max. Drill Size	1.30	1.32
Min. Drill Size	0.32	0.35
ERC & DRC Errors	0	0

Contribution:- Team member 1: Venkata Sreenivas Reddy ¬

FM Transmitter Circuit :

Designed Schematic and PCB in Eagle and EasyEDA.

Team member 2: Pavan Teja

FM Receiver Circuit :

Designed Schematic and PCB in Eagle and EasyEDA.

Concepts Used: -

- Multi Layer
- Level
- Wiring
- Boarding
- Drilling

Source: - https://www.electronicsforu.com/electronics-projects/simple-fm-receiver