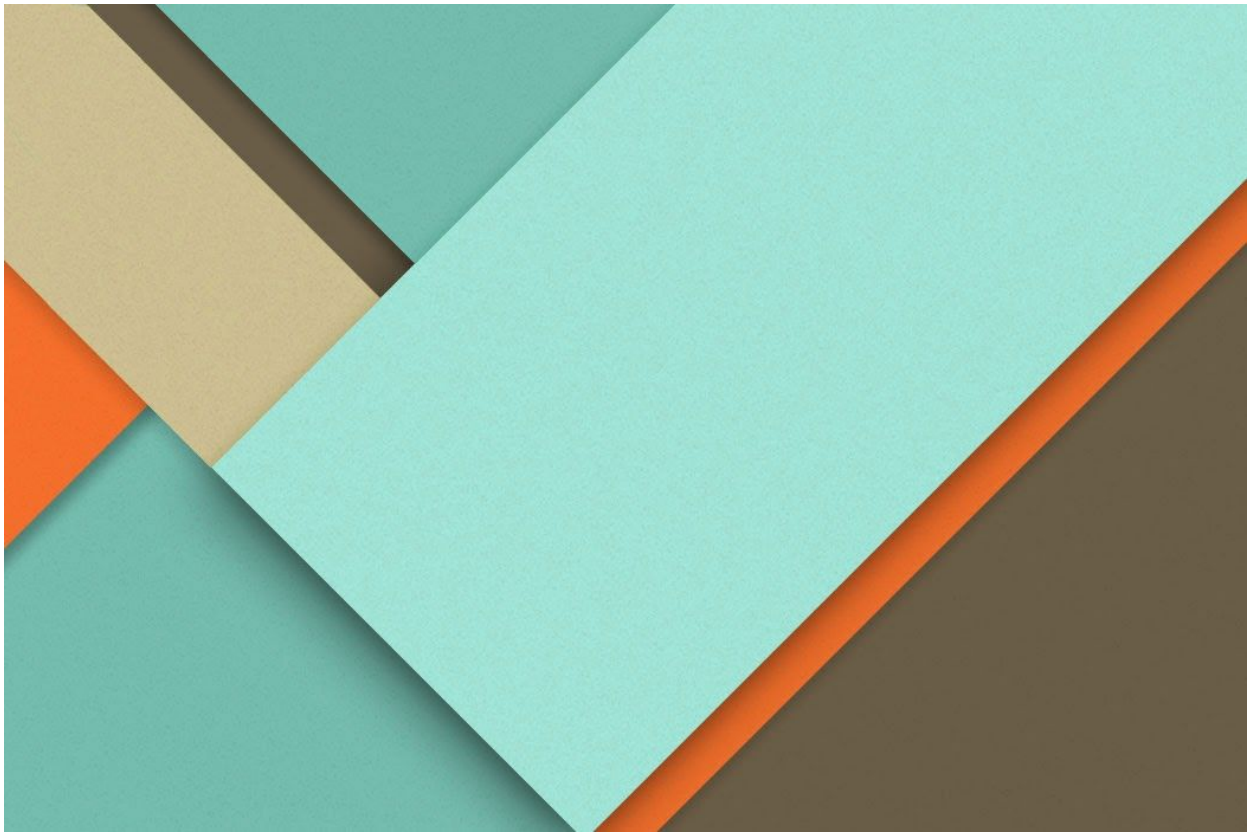

EP ASSIGNMENT

MEMBERS:

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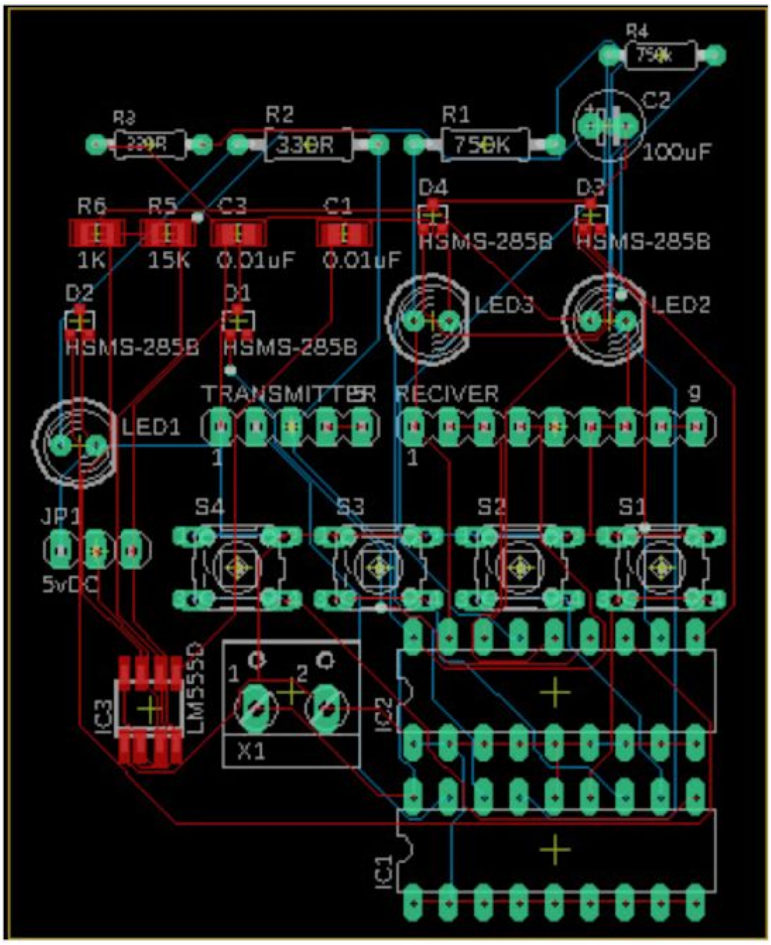
Overview

As part of our mini project, our PCB design comprised 3 components:

- RF Module(Transmitter and Receiver together)
- Timer
- 5 V 100 mA Voltage Regulator



In this assignment we have designed a ceramic package using AutoCAD software. The circuit has been imported from Eagle software.

Procedure:

1. Firstly, we create a hollow box as per the required specifications (68×55×8mm) of the PCB which is to be placed inside.
2. The thickness of the box has been kept as 2mm. The 'SUBTRACT' command was used to hollow the solid.

How does 'SUBTRACT' work?

One face of the solid is selected from the box to be removed. We are asked for the value of the thickness of the solid. Multiple faces can be selected for hollowing the object as per need.

3. In the next step, a lid was made which would enclose the package. The material used for making the box and lid is ceramic.
4.

The material can be selected by going to:

Material/Map Browser > Materials > Autodesk > Autodesk Ceramic

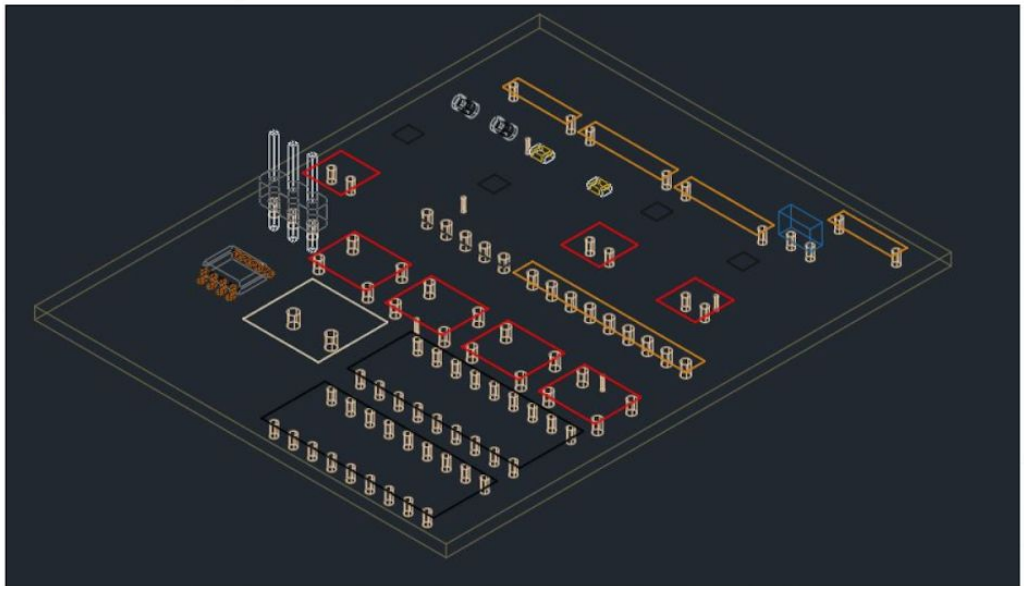
5. Now, the lid has 5 holes, each with their respective purposes. The 3 circular holes are made to accommodate male connectors for connecting to supply voltage and ground.
6. The two rectangular holes are made for the transmitter and receiver coils of the RF module.
7. All the holes were made using a combination of Presspull and subtraction commands.

How does 'PRESSPULL' work?

It is used to create an area formed by the closed boundary. It extrudes the selected objects or the bounded area. The boundary can be closed or open.

8. The positions of these holes were in accordance with their positions on the PCB which can be verified with our board file.

9. The PCB was imported as a 3D model using a STEP file utility in the EAGLE software.



10. The holes appear to be too big but they have been made so on purpose so that we can accommodate the thick connectors.

11. We then place the PCB 3D model in our package to verify the dimensions of our package. Which in turn gives us the complete package with our PCB in it.