ELECTRONIC PRODUCT DESIGN & MANUFACTURE

EN1070

SMART NOTICE BOARD

PRODUCT REPORT

GROUP NO: 10

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2. **R.Ragavan 180506G**
3. **S.Mugunthan 180405V**
4. **J.Jeyatharani 180293X**
5. **H.T.G.K.S.Bandara 180063T**
6. **B.L.P.N.Sewwandi 180589K**

PRODUCT GOALS

The main functionality of this product is to display a message on LCD display which has been sent from a mobile device. Here, Bluetooth technology is used for signal transmission.

VOLUME

400 units are to be manufactured per month in the initial stage with the purpose of doing sales promotions. With the gaining of market share batch size of production will be increased to 2000 units per month at the maturity stage.

APPROXIMATED COST

- There is a need for digital notice boards in the market.
- Only pre written message showing notice boards are available in the market.
- Our product has the feature of showing the messages given in real time.
- Consumers are willing to buy such kind of product around Rs.2000

Expected Price of the Product = Rs.1800

Price excluding 20% VAT = 1800*100/120 = Rs.1500

20% profit margin = Rs.250

Allowable cost per unit = Rs.1250

DESIGN SPECIFICATIONS

Requirements

- Capable of display the news which is sent from mobile through Bluetooth.
- Should be portable.

Whishes

- Should have an emergency backup power.

Standards

- Uses 230V, 50 Hz, AC power
- Environmental friendly

Production

- We are expecting to produce 200 products initially to capture a place in the market and then producing 2000 products in next level.
- Expect to buy electronic components outside.
- Expect to buy enclosure outside.
- In house manufacturing of PCB and assembling.

Distribution

- Planned to introduce this to schools and administration offices.
- Introduce to existing shops.
- Online marketing

Size, Weight and Appearance

- Weighs approximately 1.5 kg
- Basically has the shape of a box
- Dimensions of the enclosure approximately 20cm*20cm*25cm

Lifetime

- 2-3 years properly maintained

Maintenance

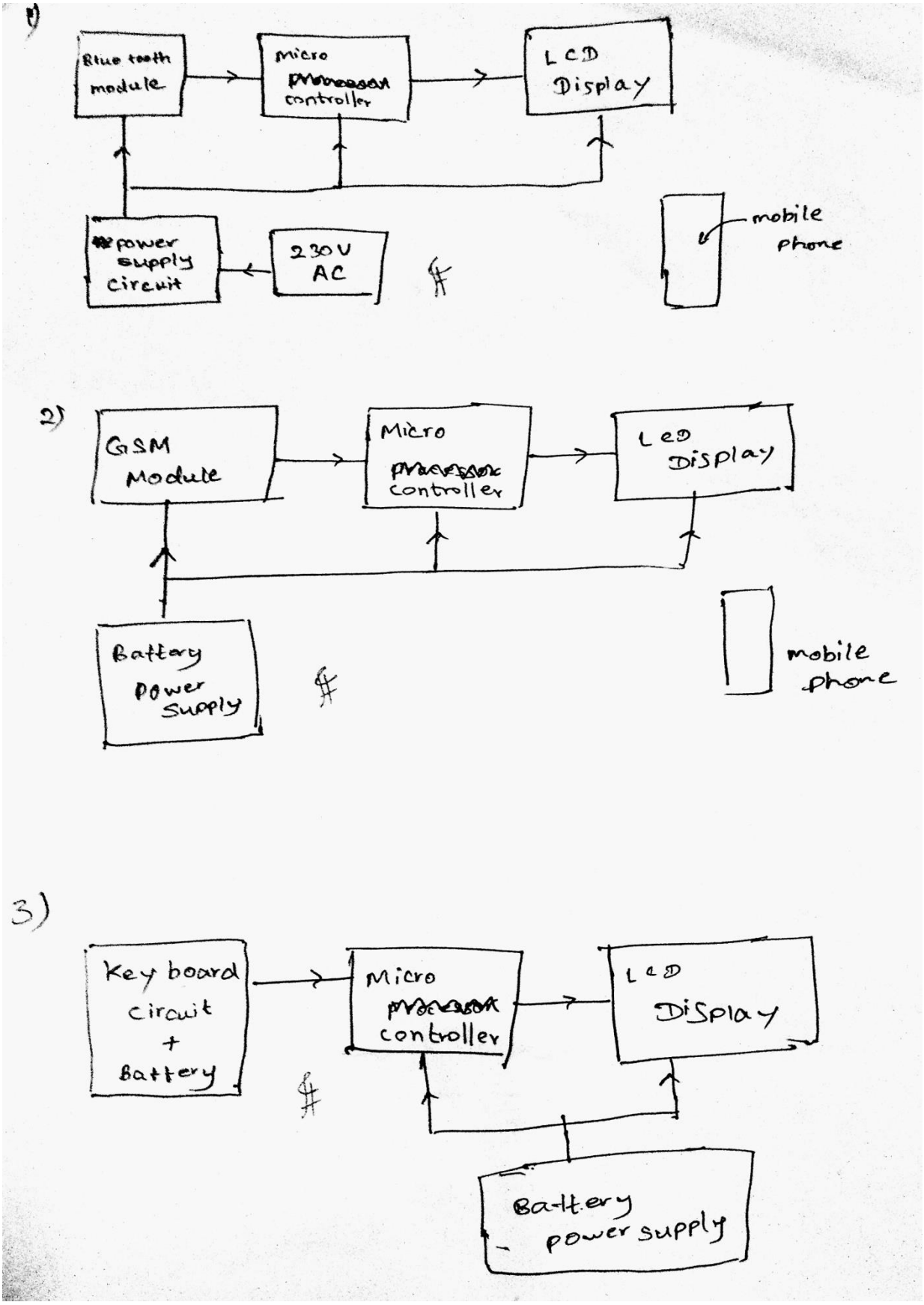
- Planning to offer free maintenance for one year and to visit their place for repair work.
- After one year planned to charge for annual check and maintenance service.

Safety

- Shouldn’t have any electrical leakages

Hand drawn sketches

Circuit view



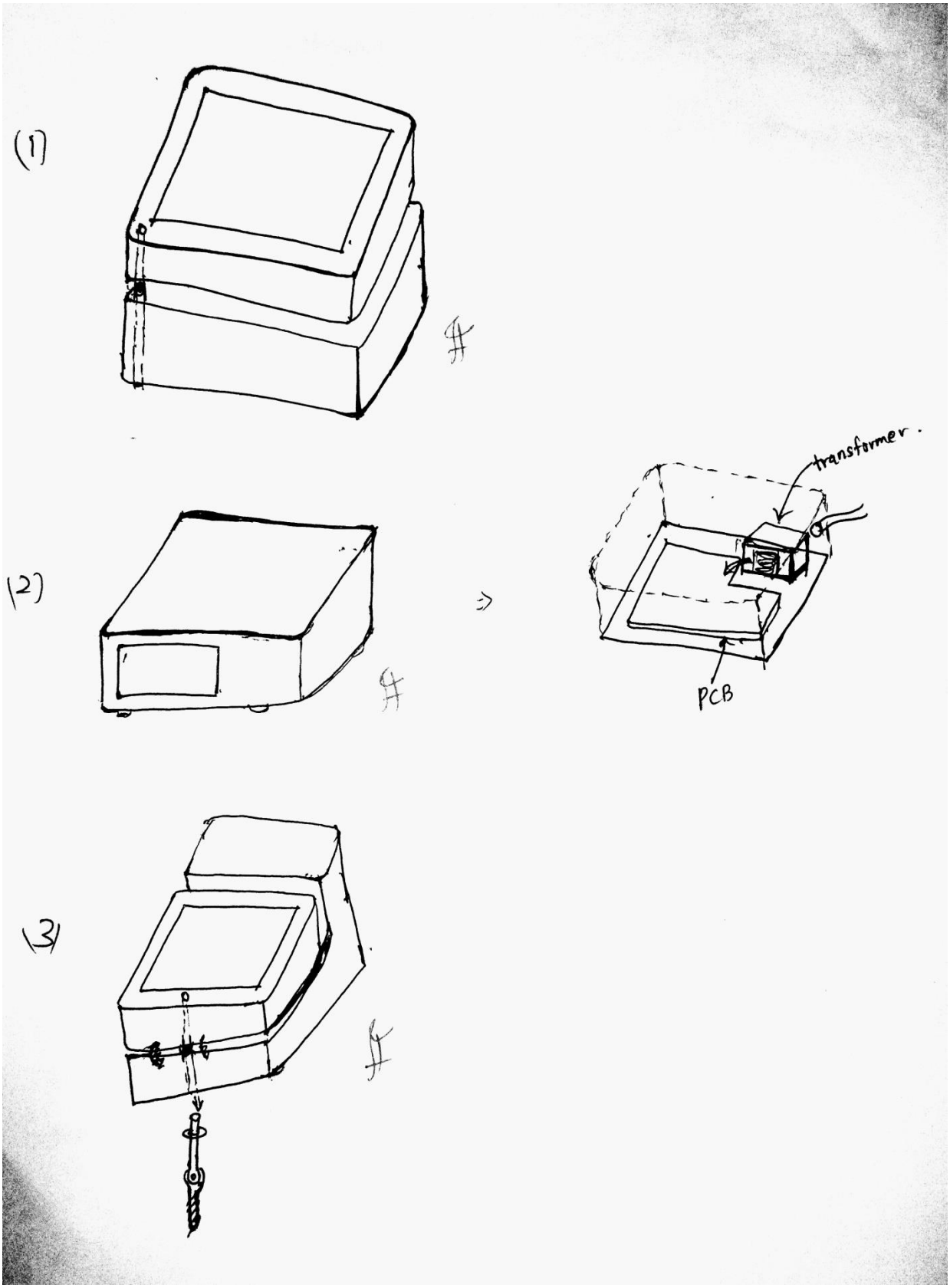
Marketing criteria for circuit view

(conceptual design)

Factors	circuit view		
	(1)	(2)	(3)
1) Manufacturing cost	10	7	7
2) Size	8	9	6
(3) Reliability	8	8	5
(4) User friendly	10	6	5
(5) Access range	5	10	6
(6) Power stability	10	6	8
(7) Security	9	9	5
(8) Cost related to usage	10	5	10
(9) Data transferring capability	9	7	7
(10) Power consumption	9	9	9
	88	76	68

Here circuit view 1 is much better than other

Encloser view



Marketing criteria for encloser view (for circuit 1)

Factors	Encloser view		
	(1)	(2)	(3)
1) Manufacturing cost	6	9	5
2) Size	5	9	7
3) Weight	7	10	9
4) Attractive	8	7	9
5) Packaging	8	7	8
6) Static stability	5	8	7
7) Handling	7	8	6
8) Production time	7	7	6
	46	65	57

According to this marking scheme, for the circuit view 1, enclose view 2 is more suitable.

Marketing criteria for encloser view (for circuit 2)

Factors	Encloser view		
	(1)	(2)	(3)
1. Manufacturing cost	4	7	6
2. Size	6	7	8
3. Weight	6	7	9
4. Attractive	8	5	9
5. Packaging	5	6	8
6. Static stability	6	5	7
7. Handling	6	8	7
8. Production time	6	7	5
	47	52	59

According to this marking scheme, for the circuit view 2 , enclose view 3 is more suitable.

Marketing criteria for encloser view (for circuit 3)

Factors	Encloser view		
	(1)	(2)	(3)
1. Manufacturing cost	6	5	4
2. Size	7	4	5
3. weight	7	5	6
4. Attractive	9	6	8
5. Packaging	7	6	6
6. Static stability	8	7	8
7. Handling	7	8	6
8. Production time	6	7	6
	57	48	49

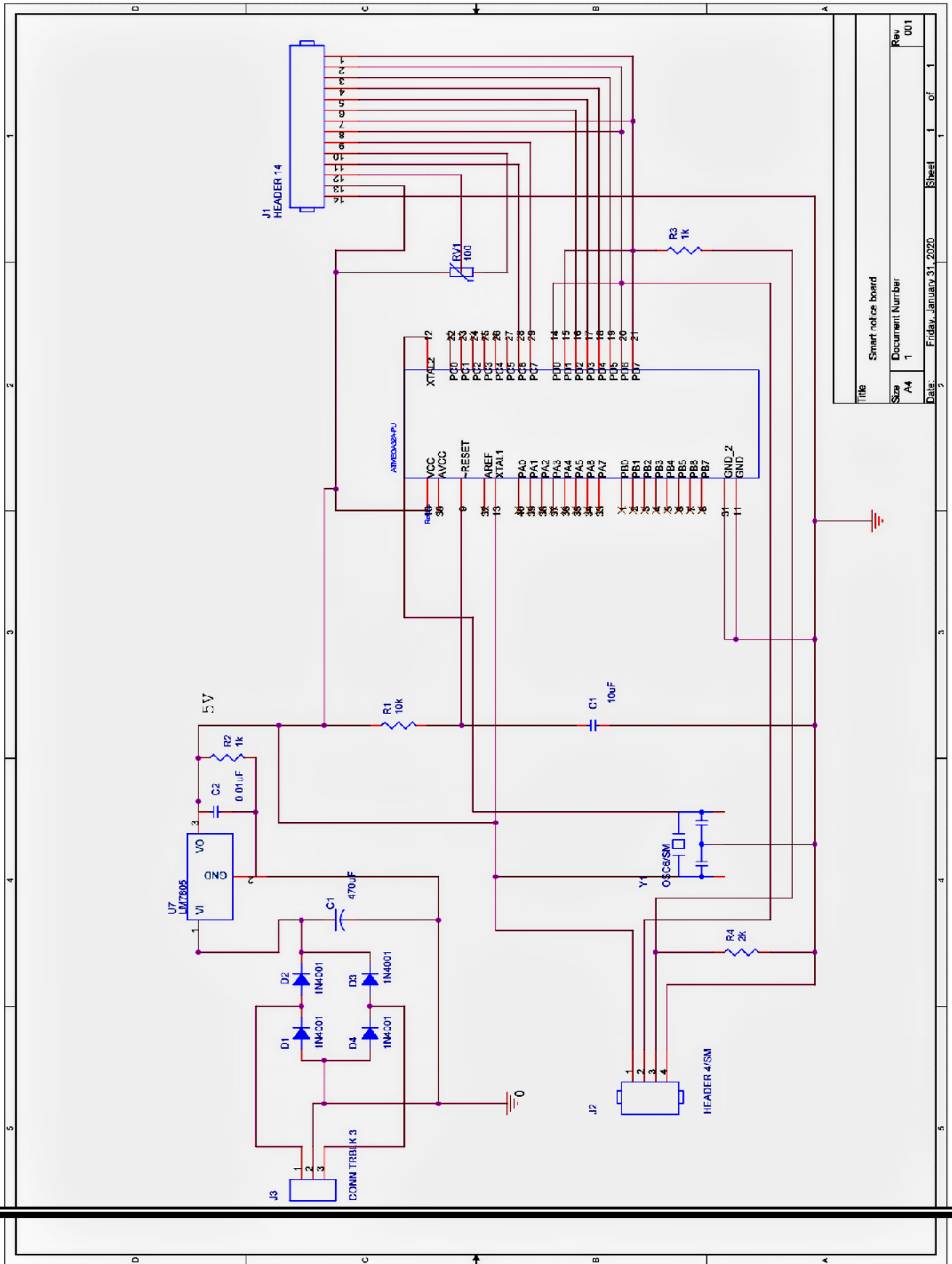
According to this marking scheme, for the circuit view 3 , enclose view 1 is more suitable.

- **Overall circuit view 1 and encloser 2 are the most suitable for this device**

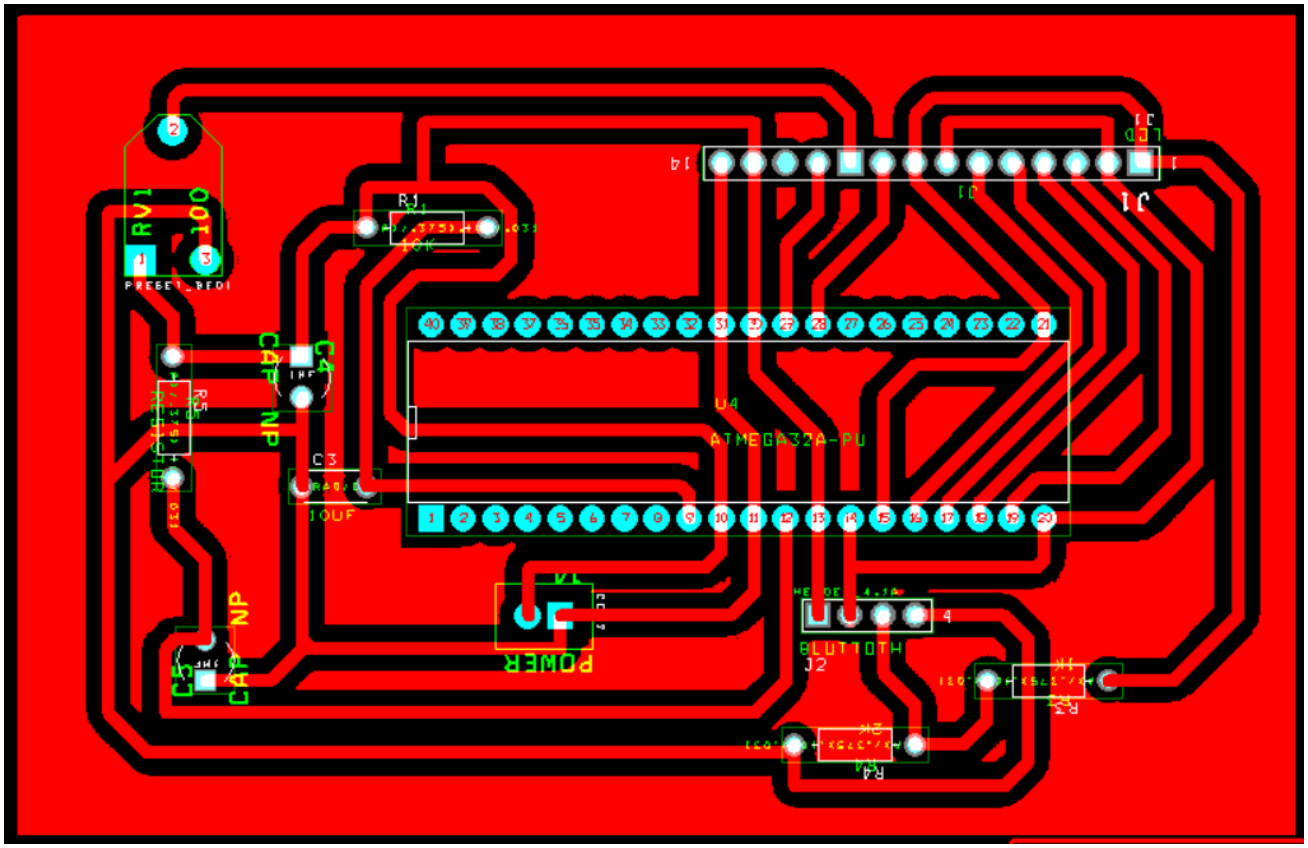
Preliminary designs

PCB design

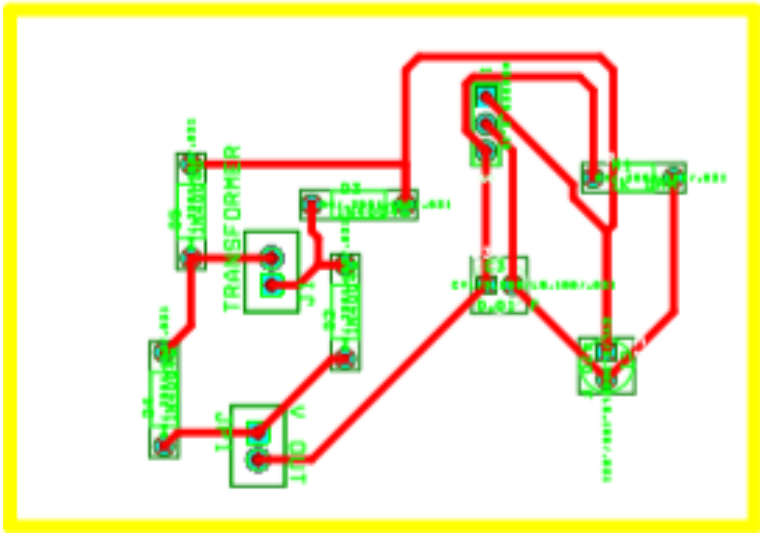
Schematic diagram

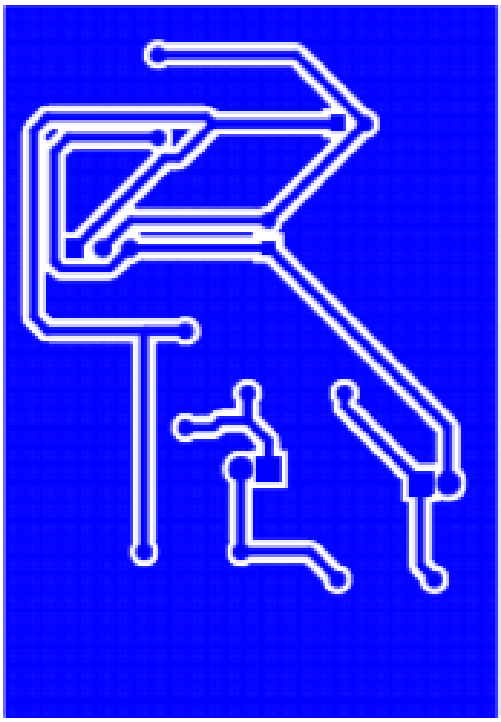


layout

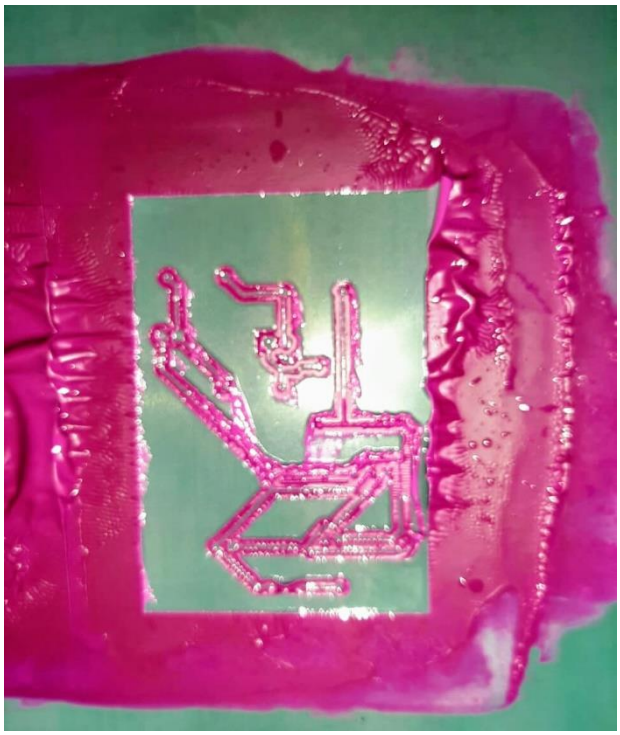


Power supply





Making PCB



Encloser design