Department of Electronics and Telecommunications

University of Moratuwa

Photographs Documentation

Soldering Station

EN2160

Engineering Design Realization

210169L- W.W.R.N.S. Fernando

210503H- I.P.D.D. Rajapaksha

Contents

1.0. Photographs of the bare PCB

1.1. DC PCB

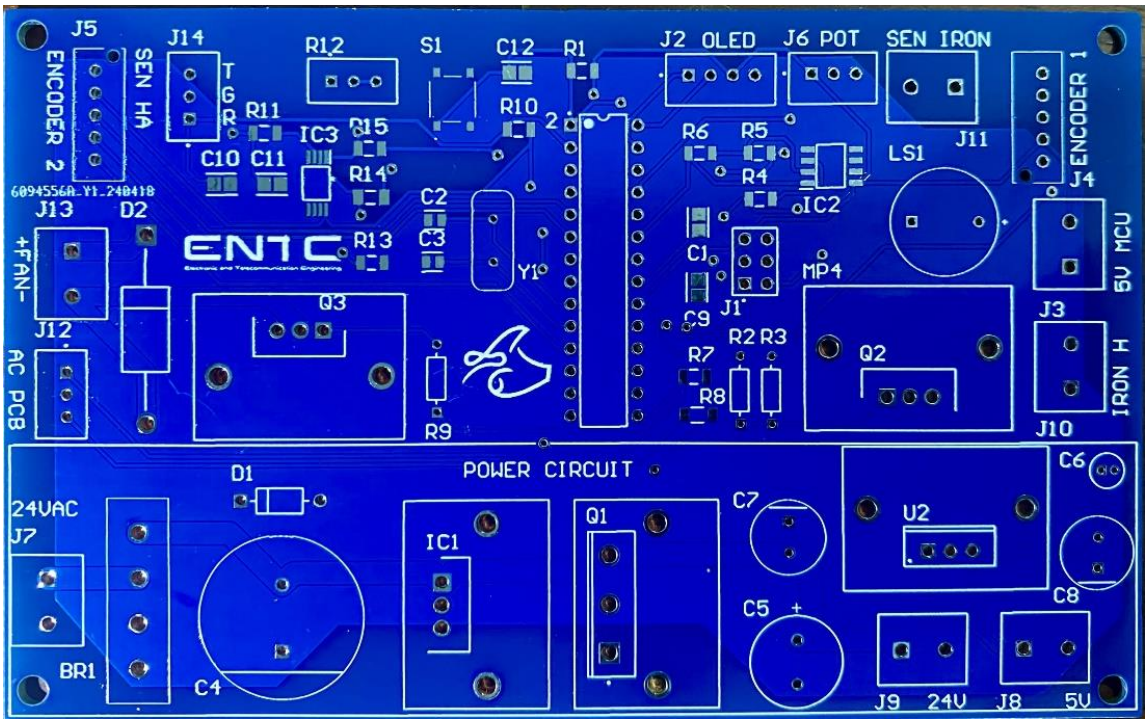


Figure 01-Front side

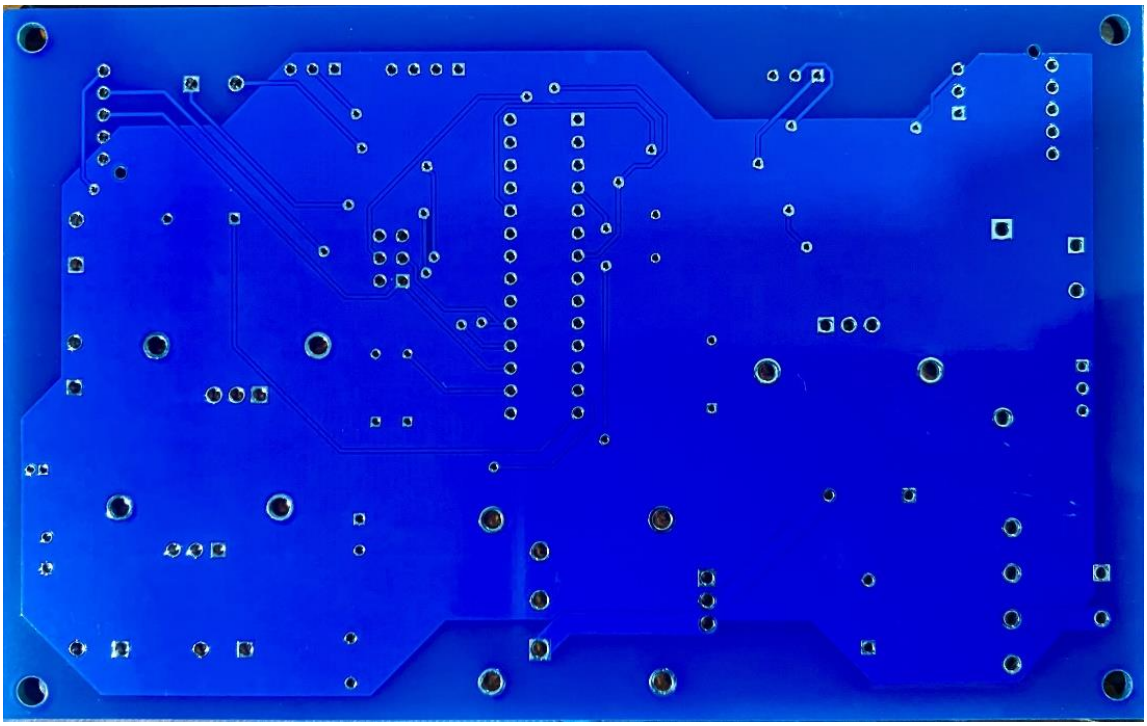


Figure 02-Back side

1.2. AC PCB

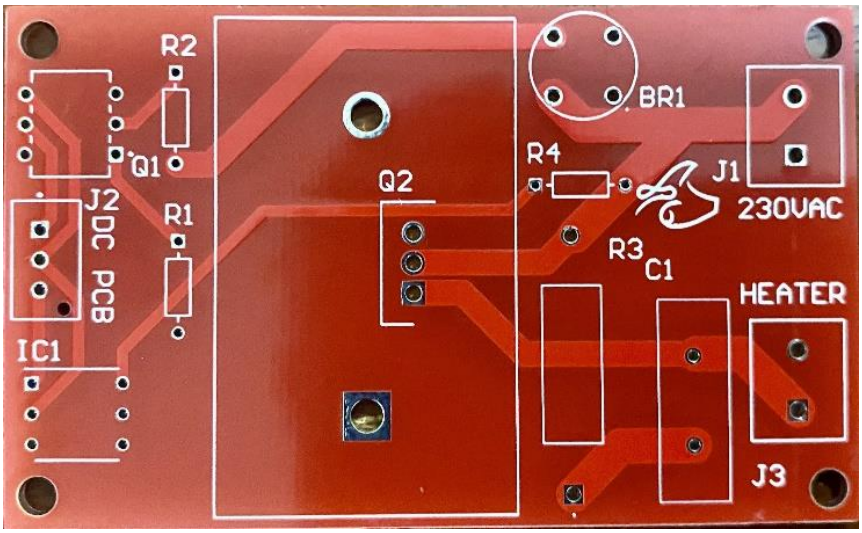


Figure 03-Front side

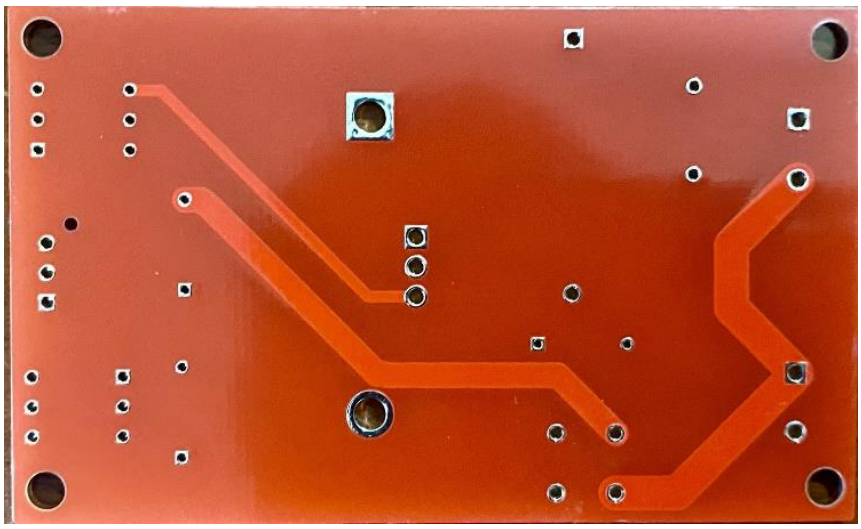


Figure 04-Back side

2.0. Photograph

2.1. DC PCB

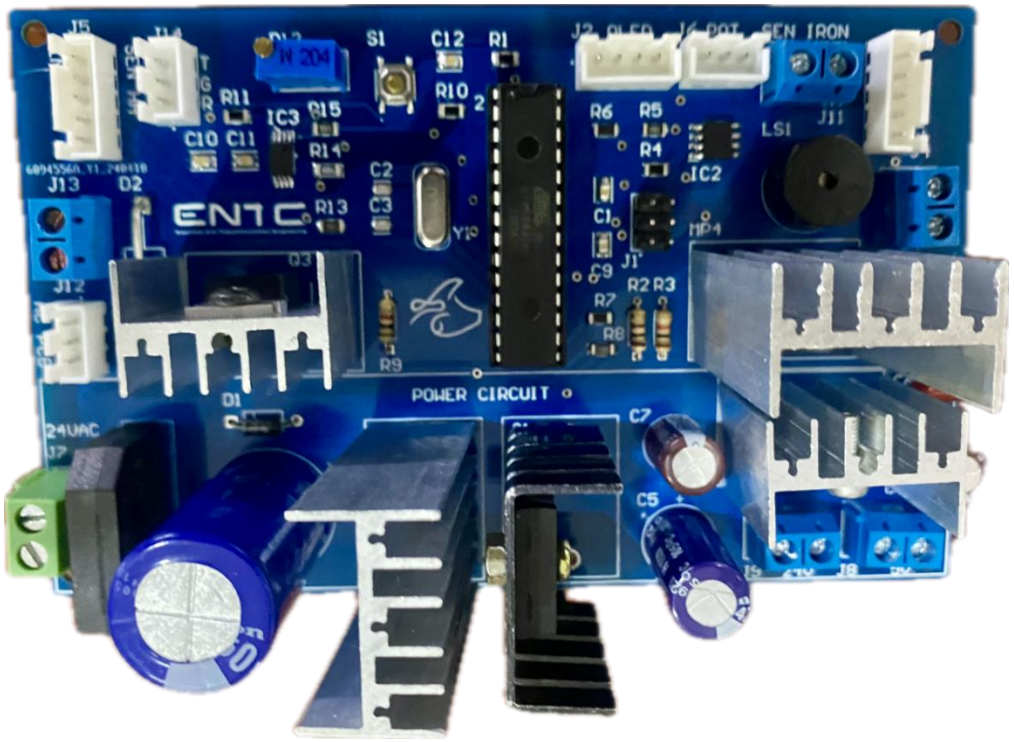


Figure 05-soldered DC PCB

2.2 AC PCB

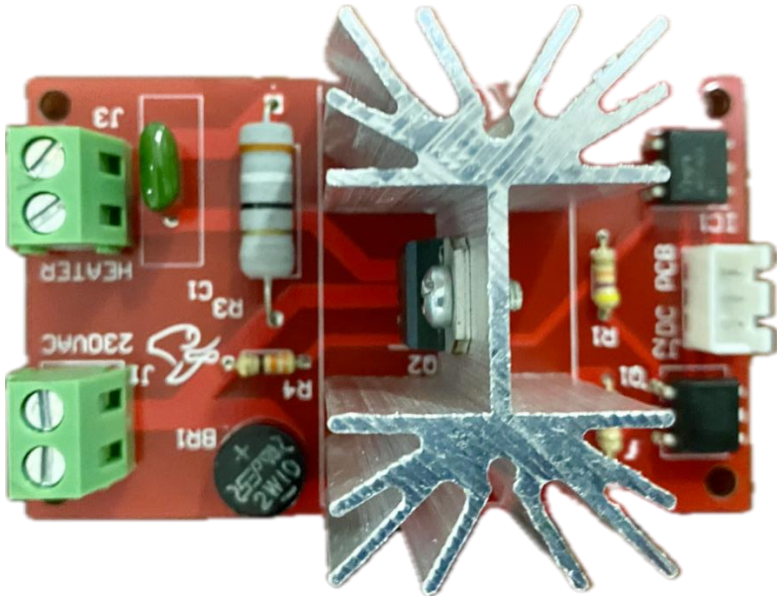


Figure 06-soldered AC PCB

3.0. Photographs as evidence for the PCB testing

The power supply circuit, microcontroller circuit, current controlling circuit, and amplifier circuit were tested before the labs closed due to a non-academic staff strike. The AC PCB, hot air current control, and amplifier still need to be tested, and the PID code for the soldering iron needs tuning. These tasks require a signal generator, an oscilloscope, and a power supply.

3.1. Sensor (Amplifier) testing

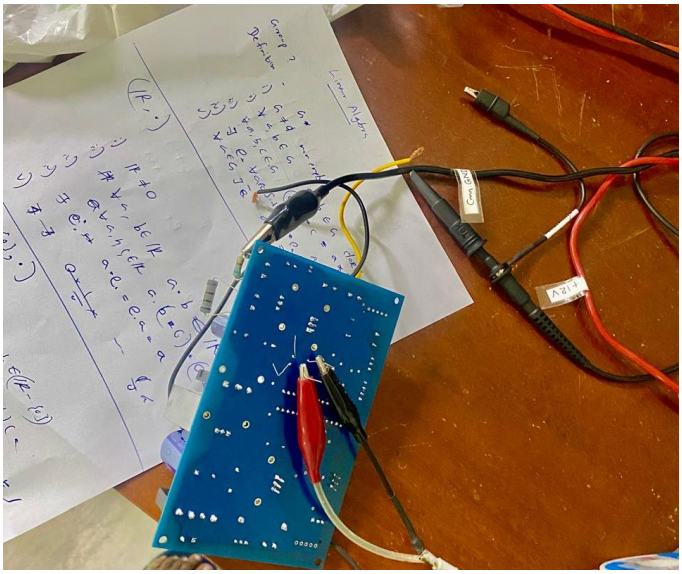


Figure 07 - Testing

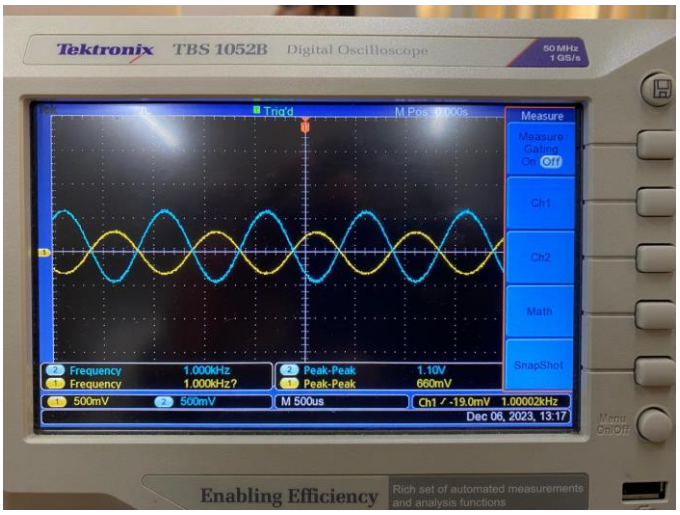


Figure 08 - Sensor output

4.0. Photographs of the physically built enclosure/functional (mechanical) parts

Figure 9 - Final design front view

Figure 10-Final design back view

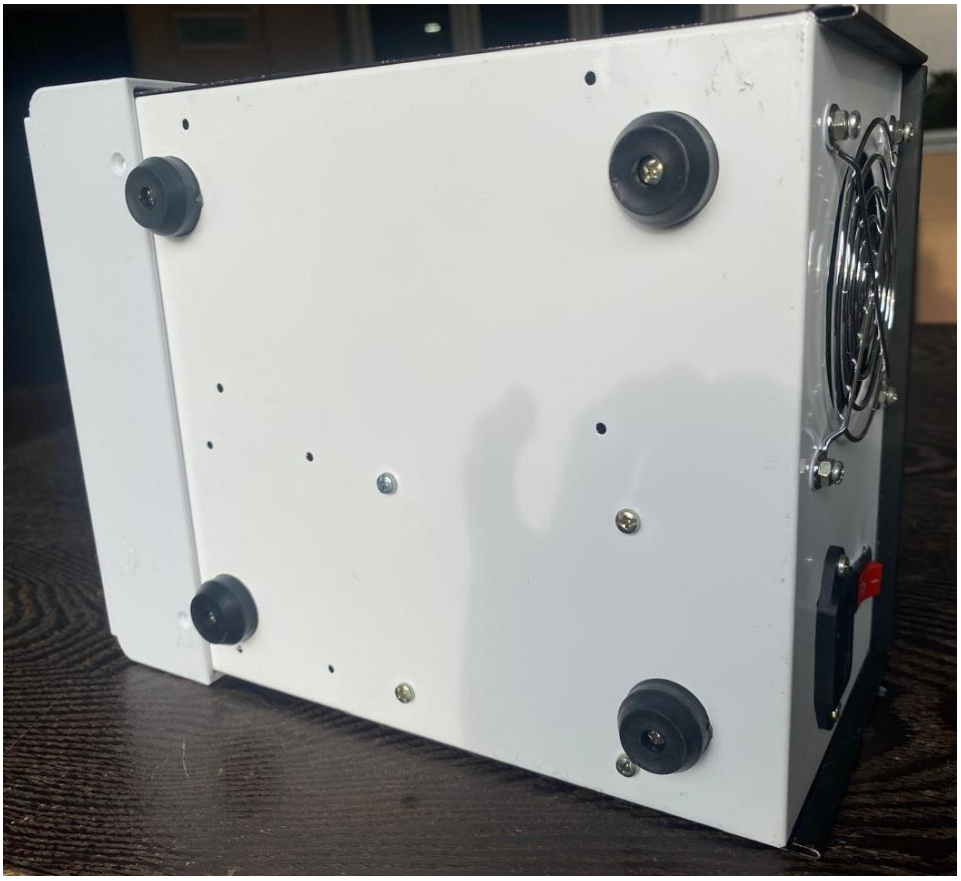


Figure 11- Final design Bottom view

Figure 12-Final design side view

Figure 13- Final design outcome

5.0. Photograph showing the system integration

Use heat sleeves, expandable braided PET cable sleeves, and wire ties for the wiring. Although the PCB testing is not yet complete, proceed with connecting the other main components of the system.

Photo collection of integration step by step

Figure 14- Soldering

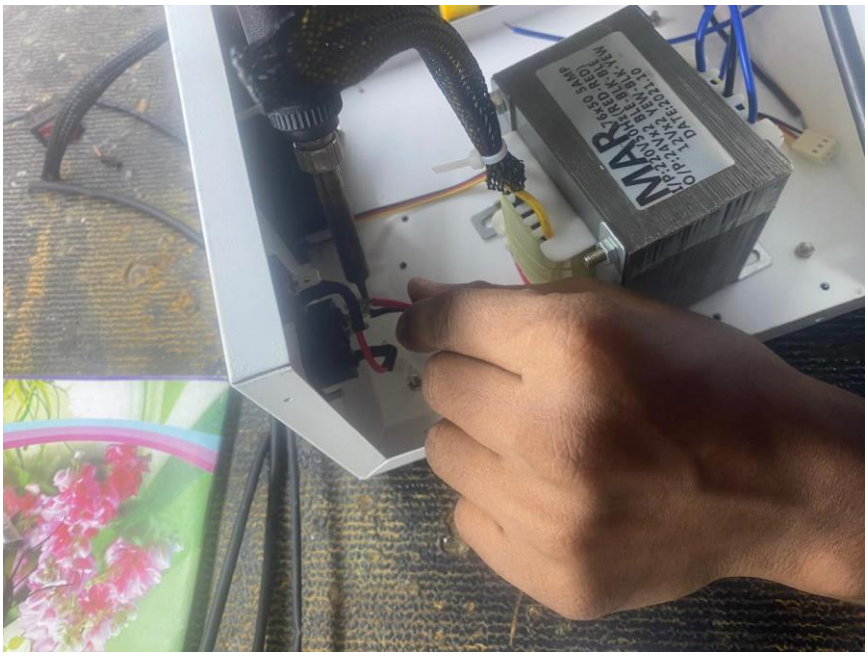


Figure 15-connecting transformer

Figure 16- connected transformer

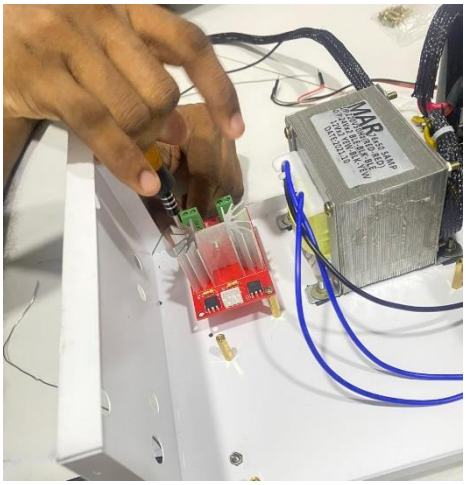


Figure 17 - mounting PCB

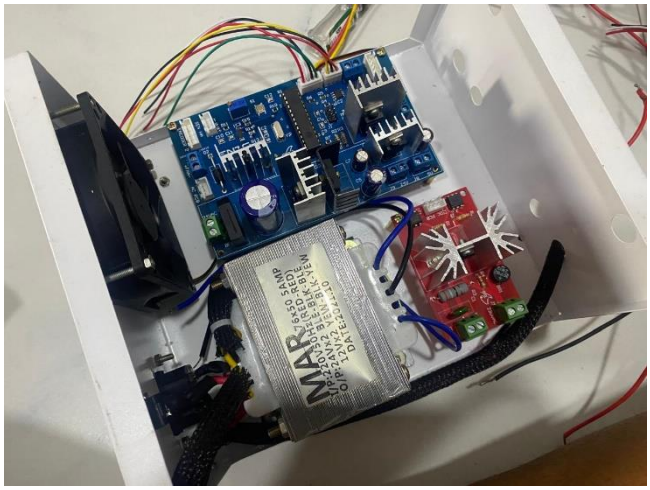


Figure 18 – mounting PCB

Figure 19 – input wiring

Figure 20 - wiring 1

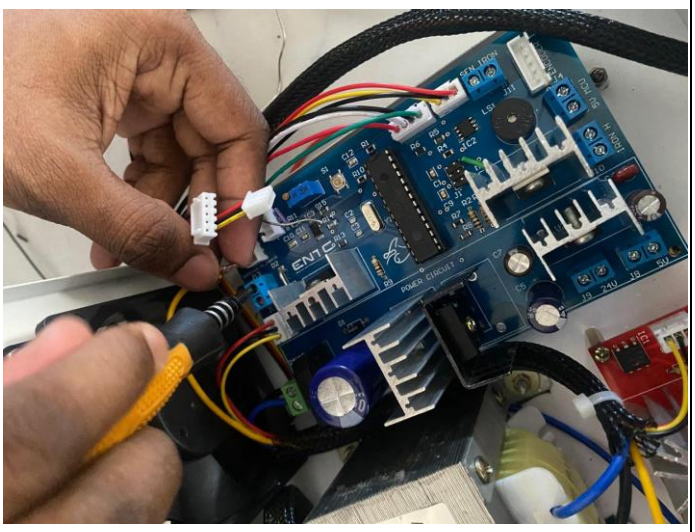


Figure 21 – wiring 2

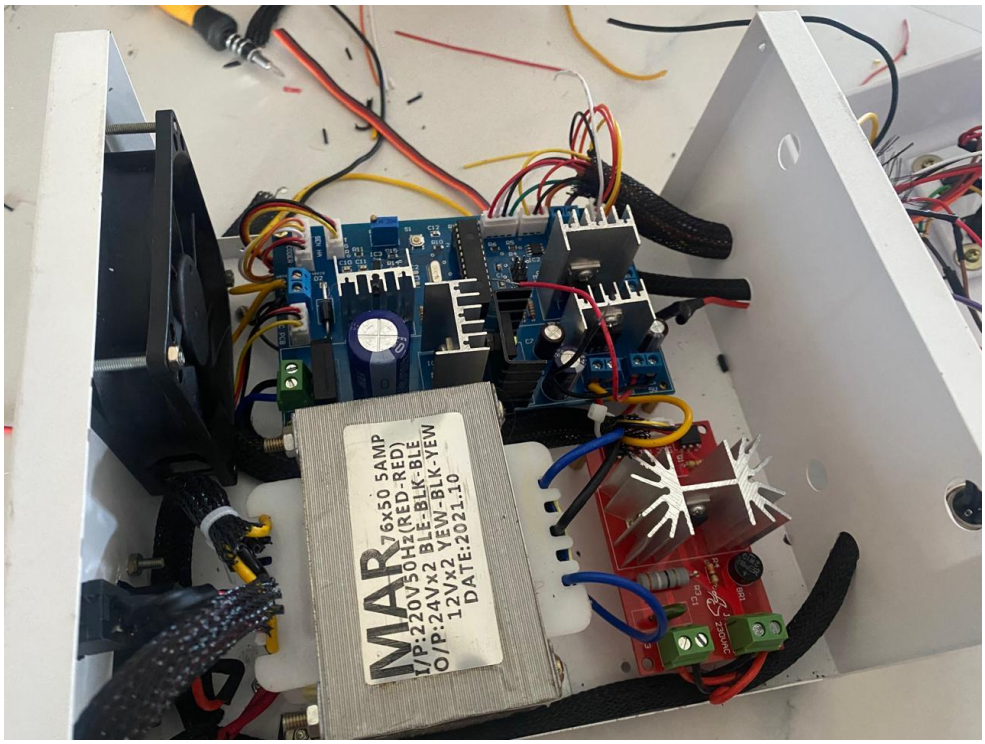


Figure 22 – wiring 3

Outcome

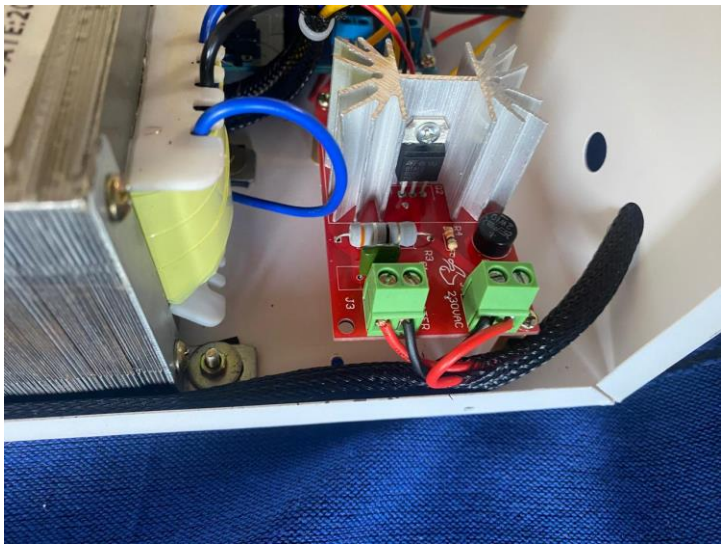


Figure 23 - expandable braided PET cable sleeves

Figure 24- expandable braided PET cable sleeves

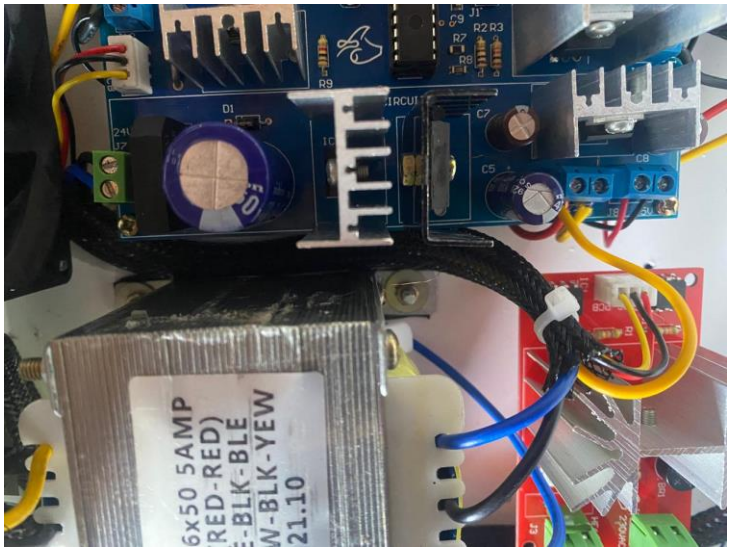


Figure 25 wire ties

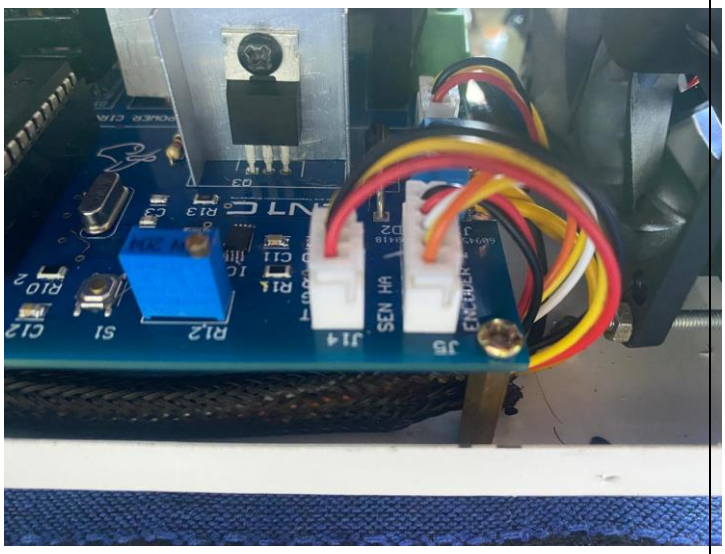


Figure 26 - JST

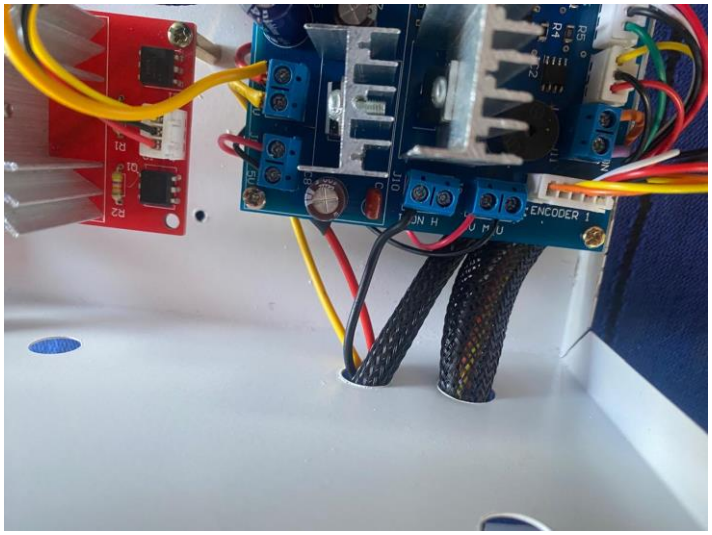


Figure 27 – integration 1

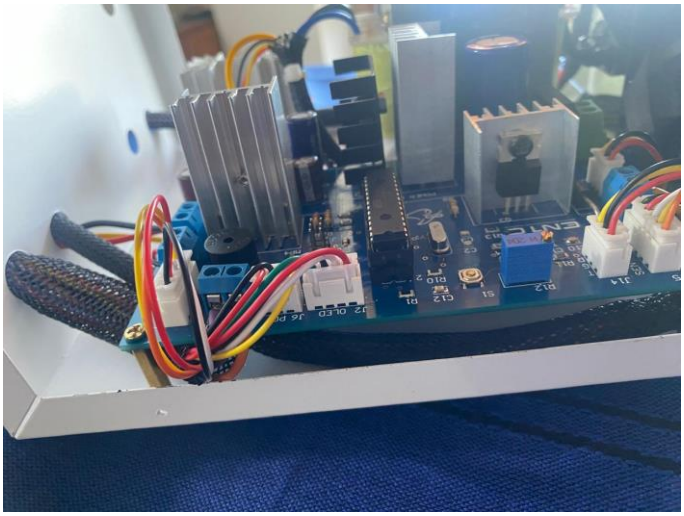


Figure 28 – integration 2

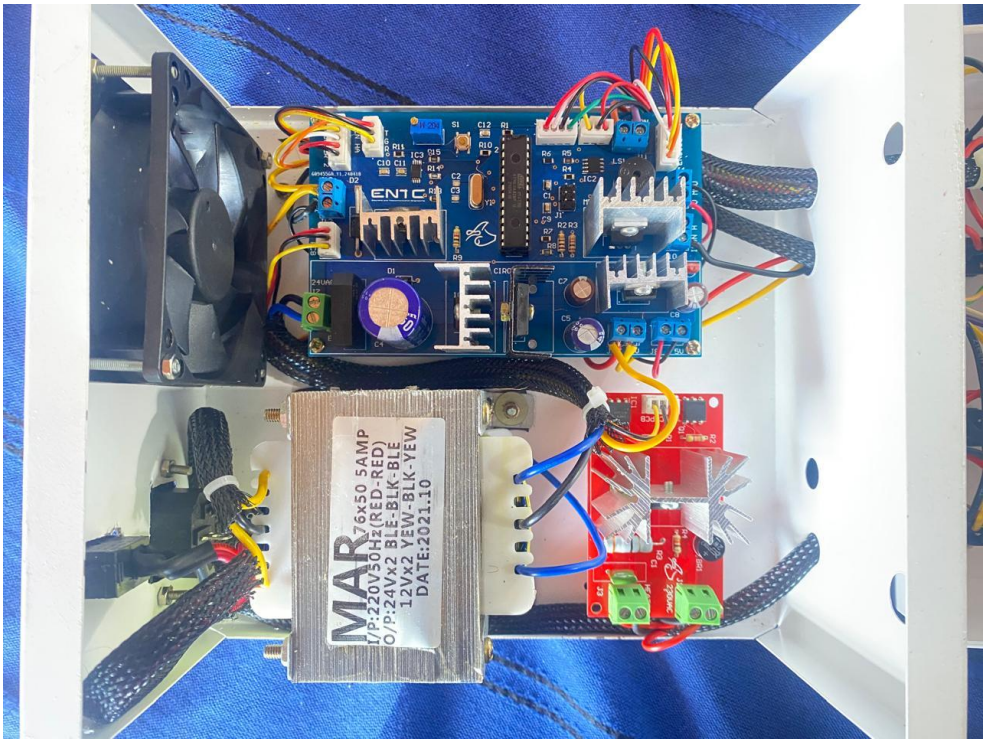
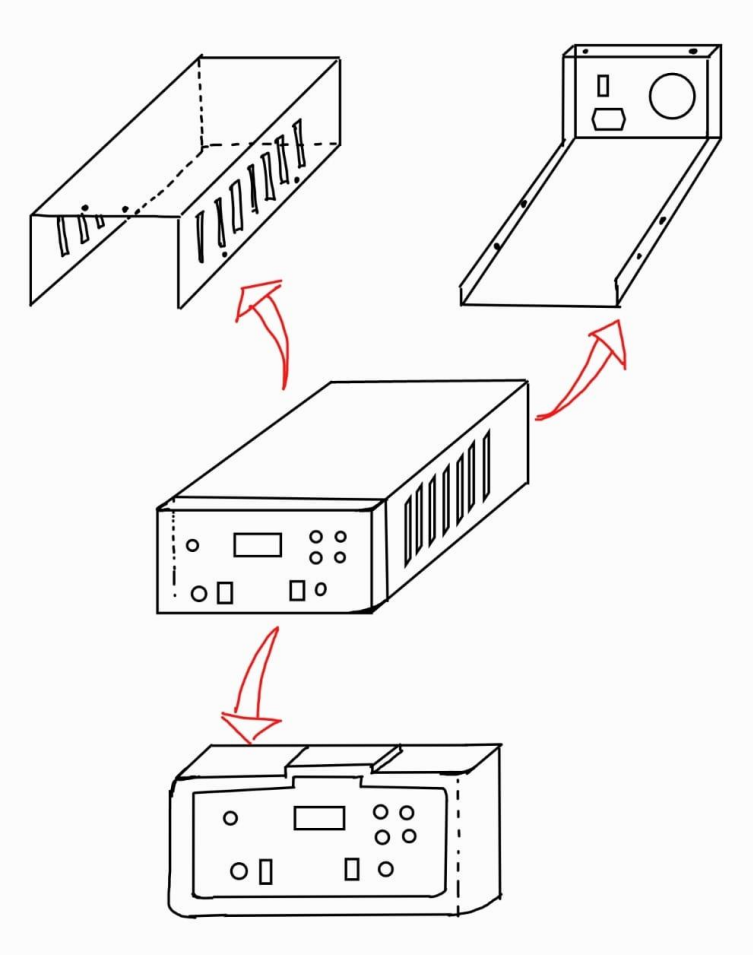


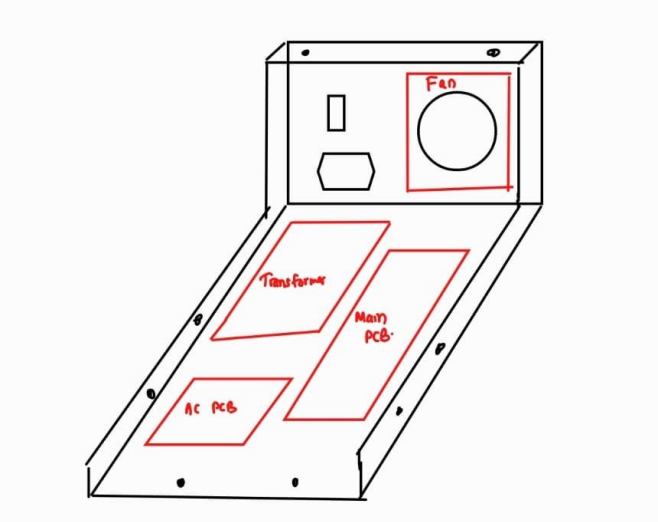
Figure 29 – finalizes wiring

Display Outcome :

6.0. Additional Photographs and sketches

6.1. Rough Sketches to Final Design





6.2. Wiring Diagram for the system