

## **BATTERY Profiler**

### **Individual Contribution Report**

#### **210027C (Alahakoon U M Y B)**

**Circuit, Schematic design, simulation and PCB design:** For the power circuit component, I designed the circuit to efficiently manage and distribute power within the system. This involved selecting appropriate voltage regulators, capacitors, and other passive components. Additionally, I conducted simulations to verify that the overall circuit met all performance requirements and ensured stable power delivery.

Along with the circuit design, I developed schematics for the power circuit. Using Altium Designer, I made all electrical connections and components essential for the circuit, ensuring a clear and representation for manufacturing and troubleshooting.

I mainly designed the printed circuit board part for the power circuit, carefully considering factors such as component placement, trace routing, and thermal management. I also collaborated with the manufacturing team to ensure the design met production standards and requirements.

**Microcontroller Programming:** I implemented a library for calculating the moving average of measured data points to smoothen the values. This library is designed to handle a 10-point moving average, making it suitable for applications that require data smoothing to reduce noise in sensor reading.

**Soldering:** I soldered parts onto the PCBs as part of the assembly process. This required the use of both surface-mount and through-hole soldering techniques.

**SolidWorks Design:** I helped design SolidWorks enclosures and assisted in physically building them using sheet metals, ensuring met designed structural requirements like power dissipations. Finally, I also assisted in creating the documentation.