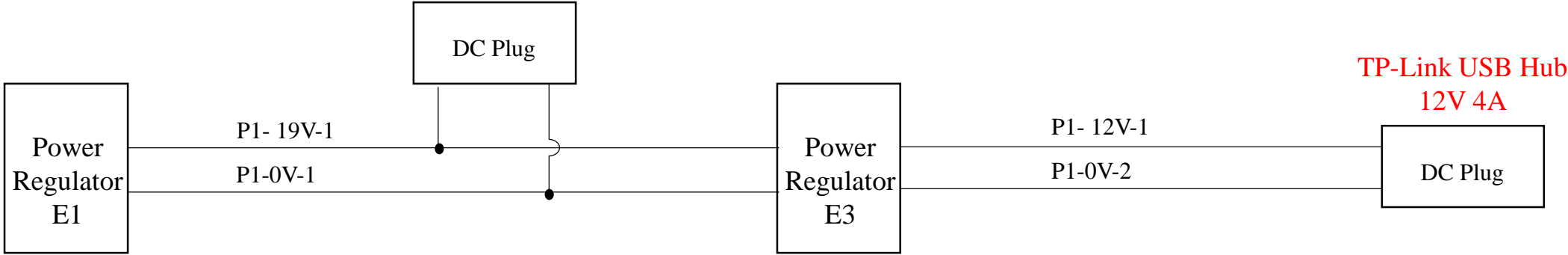


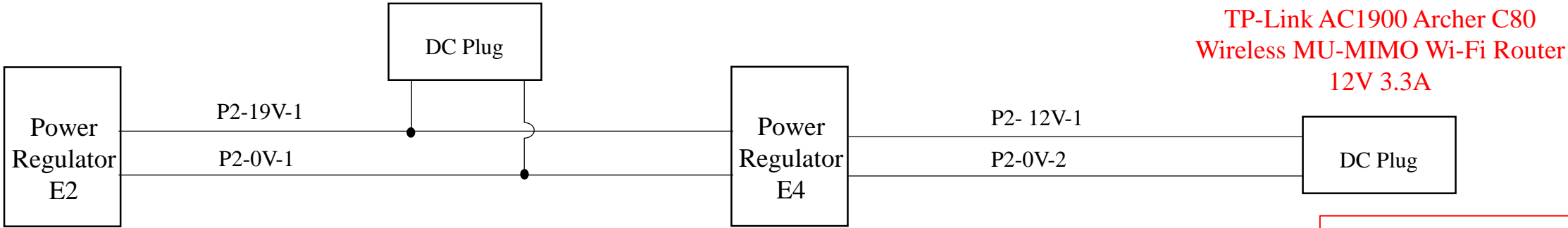
Power Management Unit

- Circuit Breakers/ Fuse (Suggestions: 60A limit to motor controllers & 10A to devices)
- DC-DC Power Regulator (24V to 24V 10A)
- Contactors (Suggestions: 60A limit to motor controllers)
- Relays (Suggestions: 10A to devices)
- Diodes
- Pre-charge Resistor (Suggestions: Around 1k)
- Safety stop button

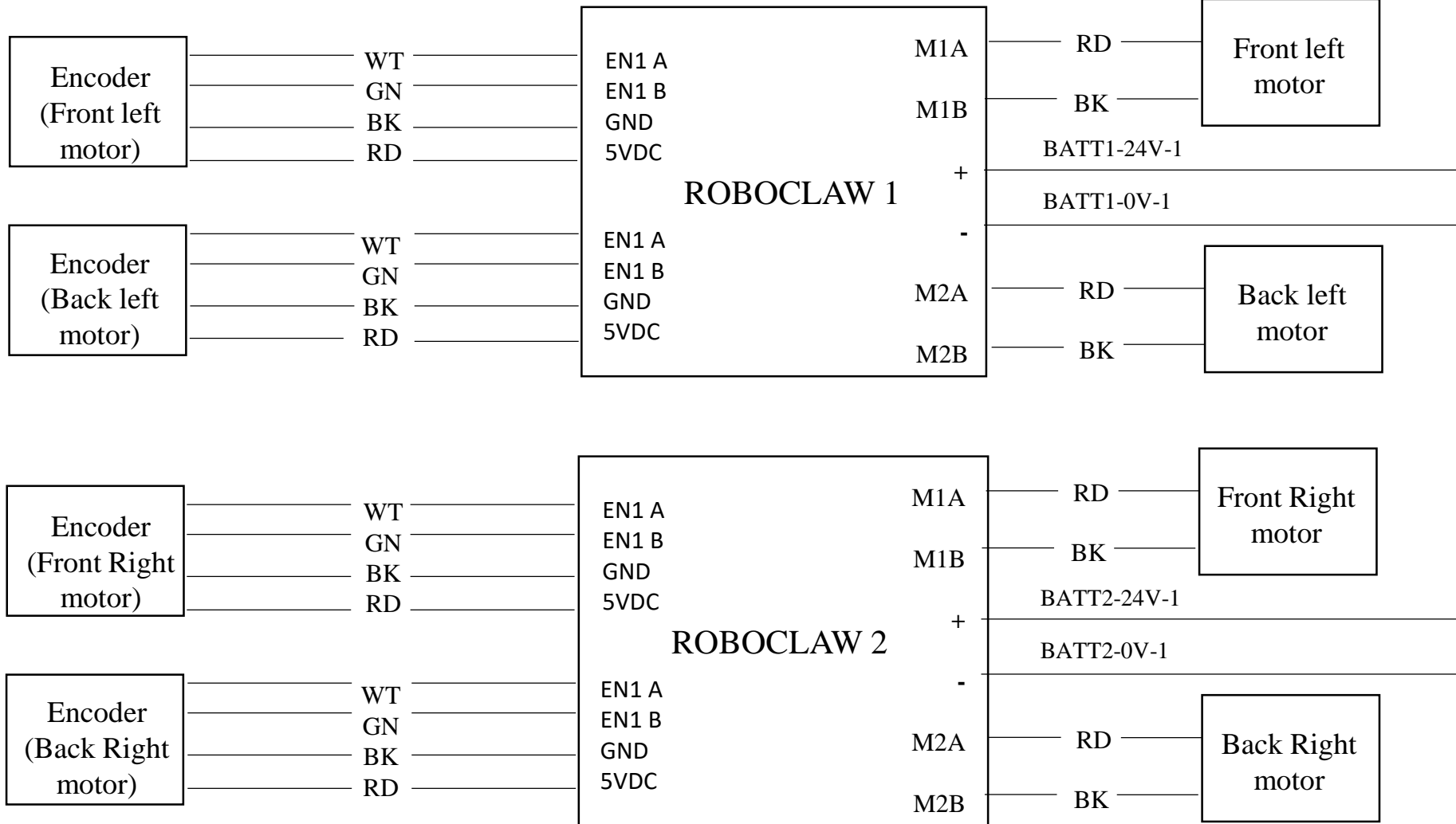
Intel NUC 10
19V 120W
5.5mm (outer) 2.5 mm (inner) Male barrel plug



NVIDIA Jetson Xavier NX Dev Kit
9-20V (10-15W)
5.5mm (outer) 2.5 mm (inner) Male barrel plug

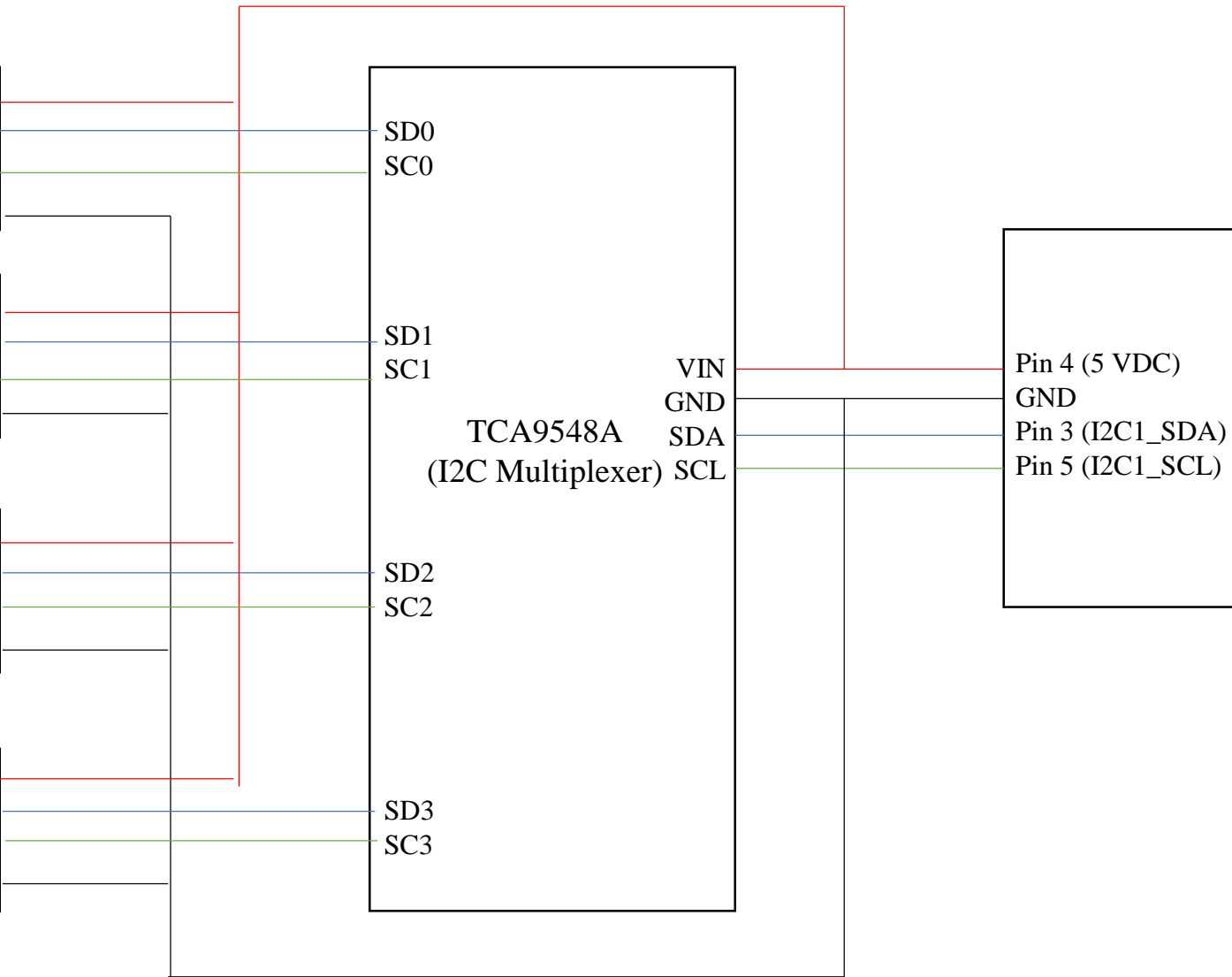
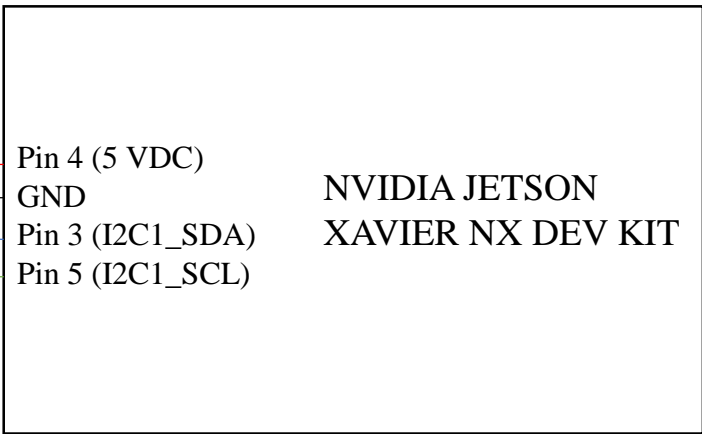
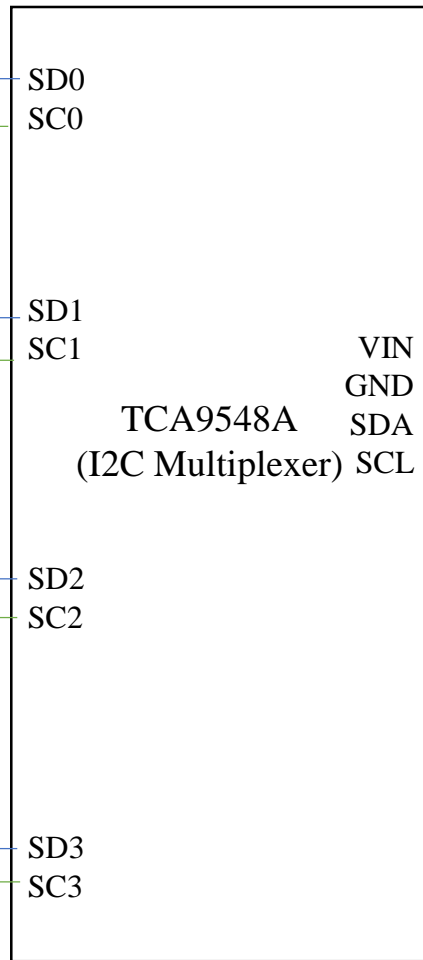
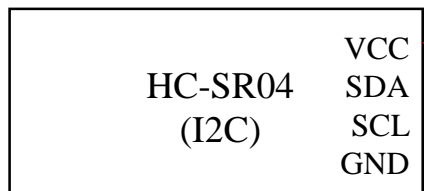
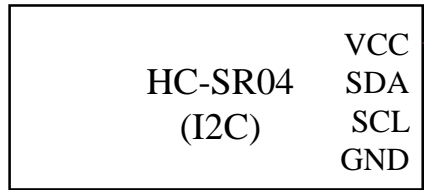
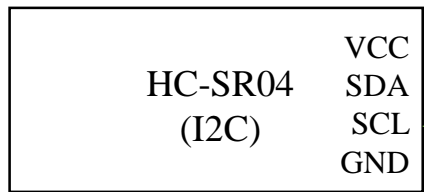
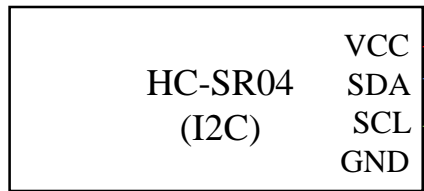


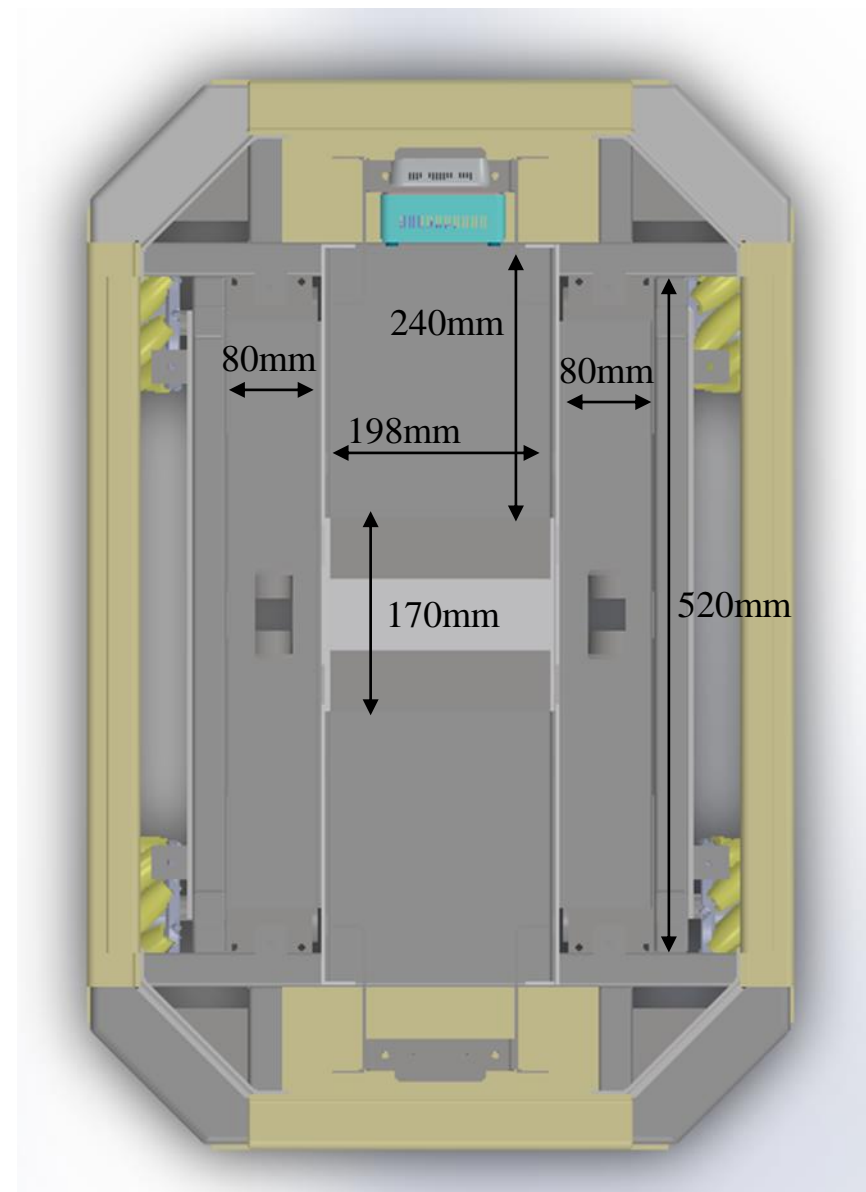
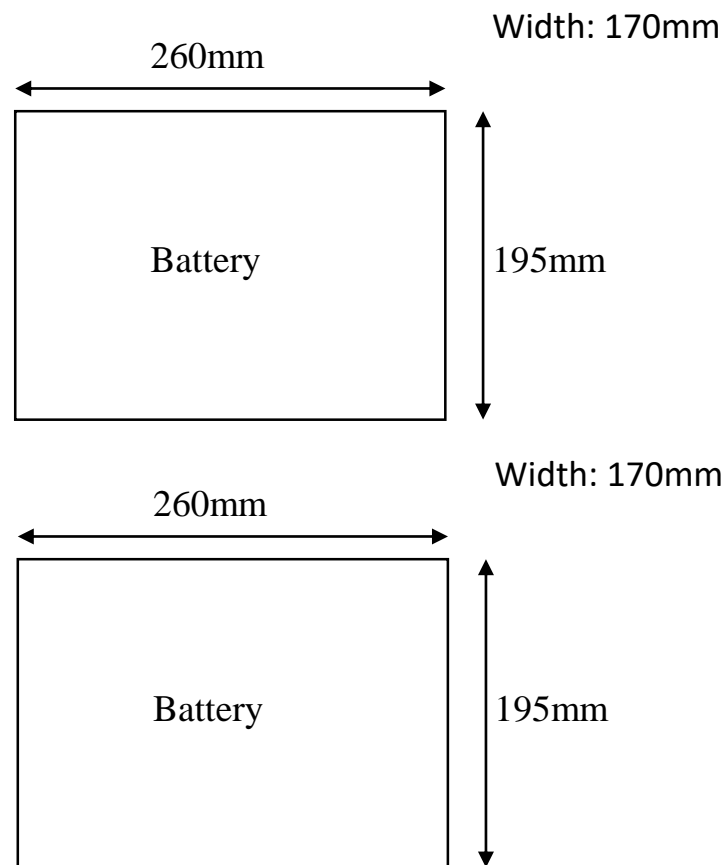
Power Regulators
E1- 24V to 19V
E2- 24V to 19V
E3- 19V to 12V
E4- 19V to 12V

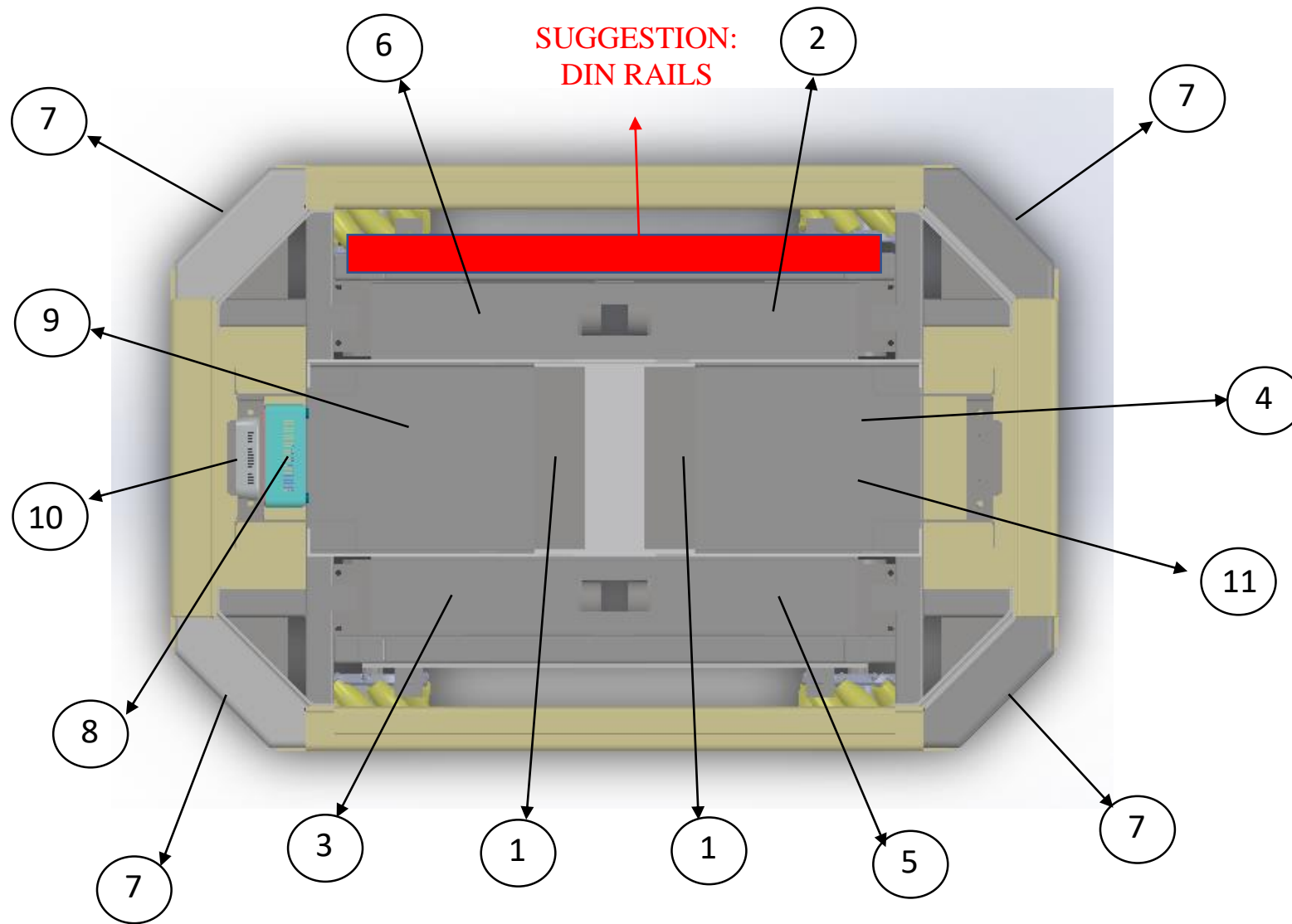


Motors Specification
Rated Voltage: 24VDC
Output power: 350W
Stall current: 60A
Rated current: 20A

Roboclaw (2x30A) Specification
Motor Channels: 2
Peak Current per Channel: 60A
Continuous Current per Channel: 30A
Bridged Channels Peak Current: 120A
Bridged Channels Continuous Current: 60A
Max Voltage: 34 VD
BEC: 5VDC @ 3A

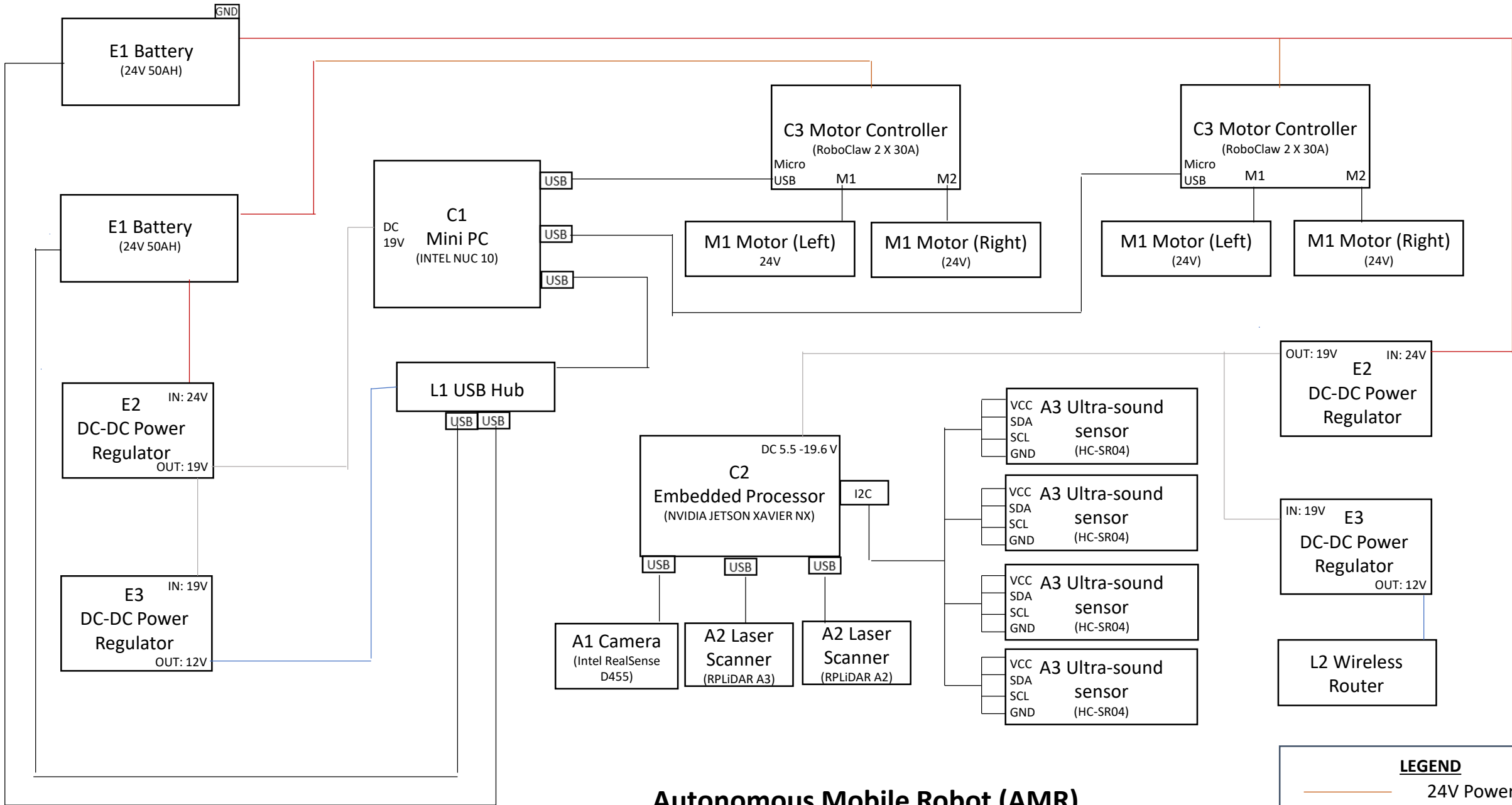






Suggested Layout

1. Battery 24V
2. Power Regulators
3. Terminal Blocks
4. 2 Motor Controllers (Roboclaw)
5. USB Hub
6. Power Management Unit
7. HC-SR04 Ultrasonic Sensors
8. Intel NUC 10
9. NVIDIA Jetson Xavier NX Dev Kit
10. Intel RealSense D455
11. Wireless Router



Autonomous Mobile Robot (AMR)
Block Diagram

*Power Management Unit is not included in the diagram

LEGEND

- 24V Power Line
- 19V Power Line
- 12V Power Line
- Data transmission line