ELECTRONICS REPORT - ERC HACKATHON - ELECTROMAVERICKS

| **COMPONENT NAME** | **COMPONENT JUSTIFICATION** | **COMPONENT SPECIFICATION** | **COMPONENT LINK** |
| --- | --- | --- | --- |
| Hall effect sensor module | To detect current in the wire | - | https://www.electronicscomp.com/hall-effect-sensor-module-online-india?gad\_source=1&gbraid=0AAAAADgIFEV-clqiiC\_JwRCv9ZPnXlnra&gclid=Cj0KCQjwwuG1BhCnARIsAFWBUC2bzFkKvp0win3r\_\_A1EIq01YGWOhXL5tEXwO-2zGhOo25PEY9W6v0aAvYLEALw\_wcB |
| LewanSoul Serial Bus Servo | To control the servo motors |  | https://www.amazon.com/LewanSoul-BusLinker-Debug-Board-LX-16A/dp/B073WRLJB2 |
| Hiwonder LX-16A Full Metal Gear Serial Bus Servo with Real-Time Feedback Function for RC Robot( Control Angle 240) | Servo Motors x6 | Torque: 17 kg.cm 6V; 19.5 kg.cm 7.4V | https://www.hiwonder.com/products/lx-16a |
| 2S LiPo Battery | Battery |  | https://robokits.co.in/batteries-chargers/drone-batteries/genx-power-premium-lipo-battery/genxpower-7.4v-lipo-batteries/genx-7.4v-2s-5200mah-40c-80c-premium-lipo-lithium-polymer-battery |
| 10 A fuse | To protect circuit |  | https://www.amazon.in/Bussmann-GMA-10A-Acting-Cartridge-Listed/dp/B0055B68WS |
| Step Down Buck Converter with MP1584 | To reduce voltage for arduino |  | https://robu.in/product/mini-mp1584-dc-dc-3a-adjustable-buck-module-india/?gad\_source=1 |
| TTL to USB Convertor | To take input from arduino to the motor driver |  | https://www.amazon.in/PL2303-Converter-Adapter-Aurdino-Raspberry/dp/B00UZERG94 |

The rover is to be controlled with a joystick. The design was inspired by Sawppy the rover. The pcb shield was not made because the motor driver handles the motor well and arduino has many ports free for the hall sensor.

The tinkercad simulation: <https://www.tinkercad.com/things/cdqT8Rn5III-erc-hackathon?sharecode=1uncmmSw8T4x6i4lPJPc2XSlblv4__Iq3vGo6DbAIkE>

The robotic arm simulation: <https://www.tinkercad.com/things/ivYB2gKYJaG-robotic-arm?sharecode=-Phxp_8wN8Xf-Em5tXSIqfHEn4AJn2heGUzvdAiZpfY>