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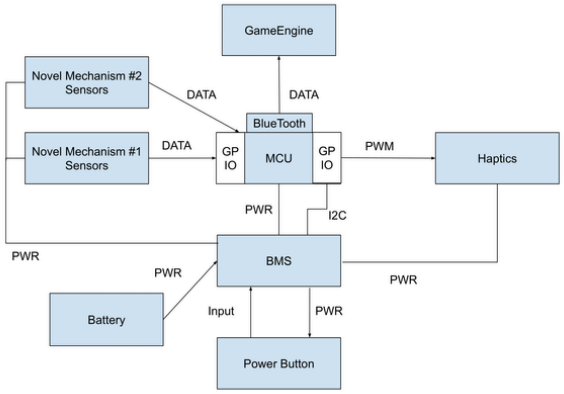
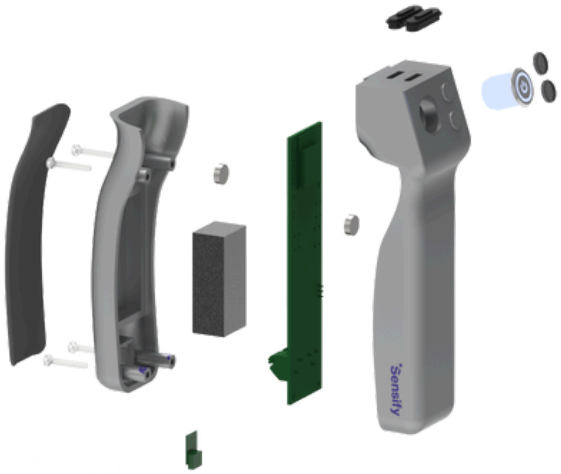
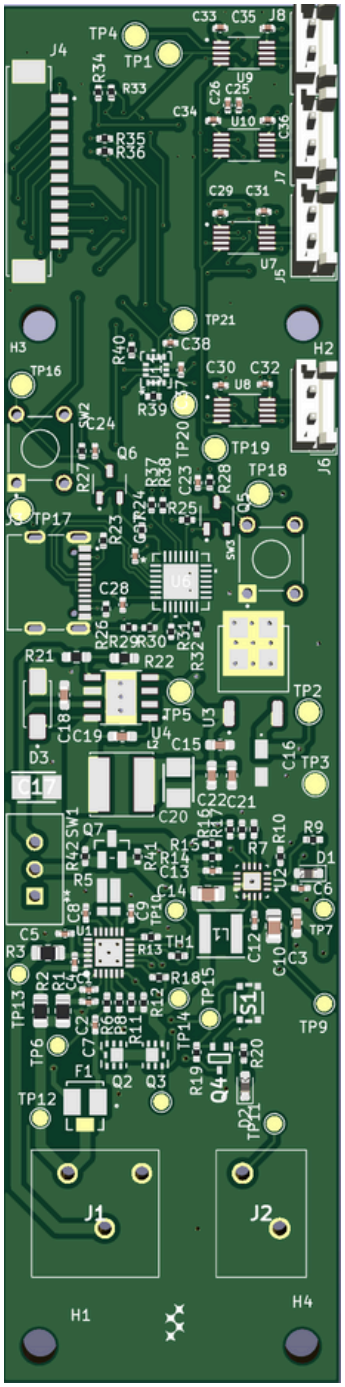
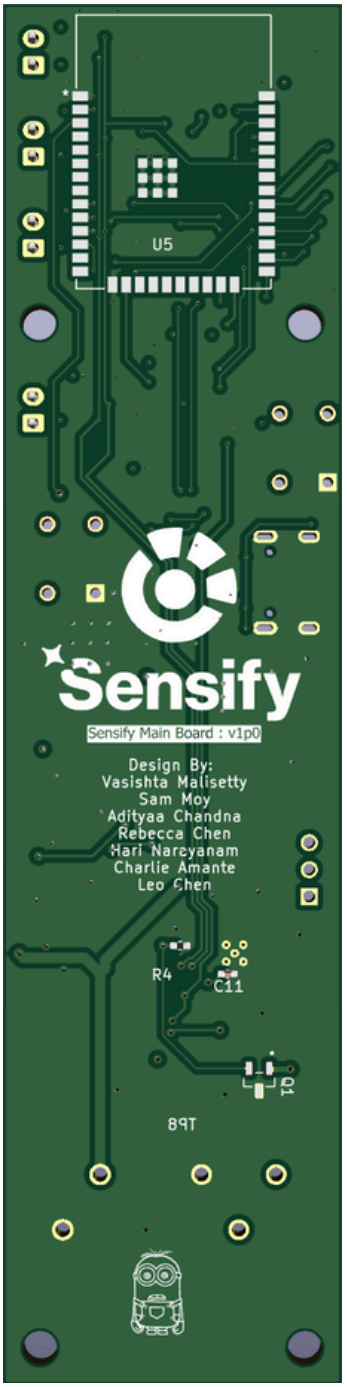
MODULAR VIRTUAL REALITY CONTROLLER (SENSIFY)









What?

- **Led a team of 12 engineers** in the electrical development of a **modular virtual reality controller**, addressing the need for realistic tool-based haptic feedback to enhance virtual reality training simulations

How?

- **Designed and integrated** the battery management system, haptics network, and modular tool attachments into **three small form factor PCBs** using an **ESP32 microcontroller, DRV2605 haptic drivers,** and **buck convertors**
- **Developed a state machine in C++** to **manage haptic feedback**, **analyze sensor data**, and **enable Bluetooth & HID communication** between the controller and virtual reality simulation

Results

- Successfully implemented modular functionality, enabling data transmission, and haptic feedback integration.