

Team 12

The Two Wheel Deal

SS 4000

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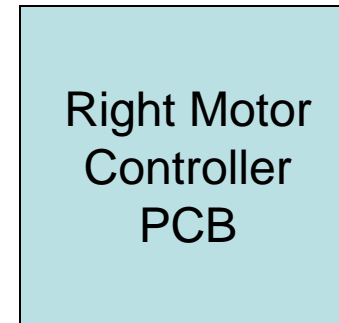
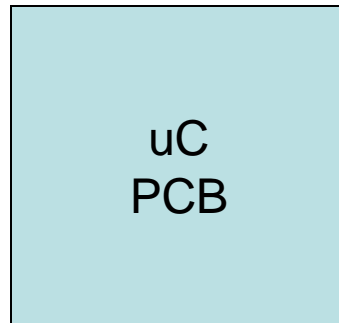
Design Considerations

- Power Considerations
- Physical Layout
- Microprocessor PCB

Circuit Overview

Power Consideration

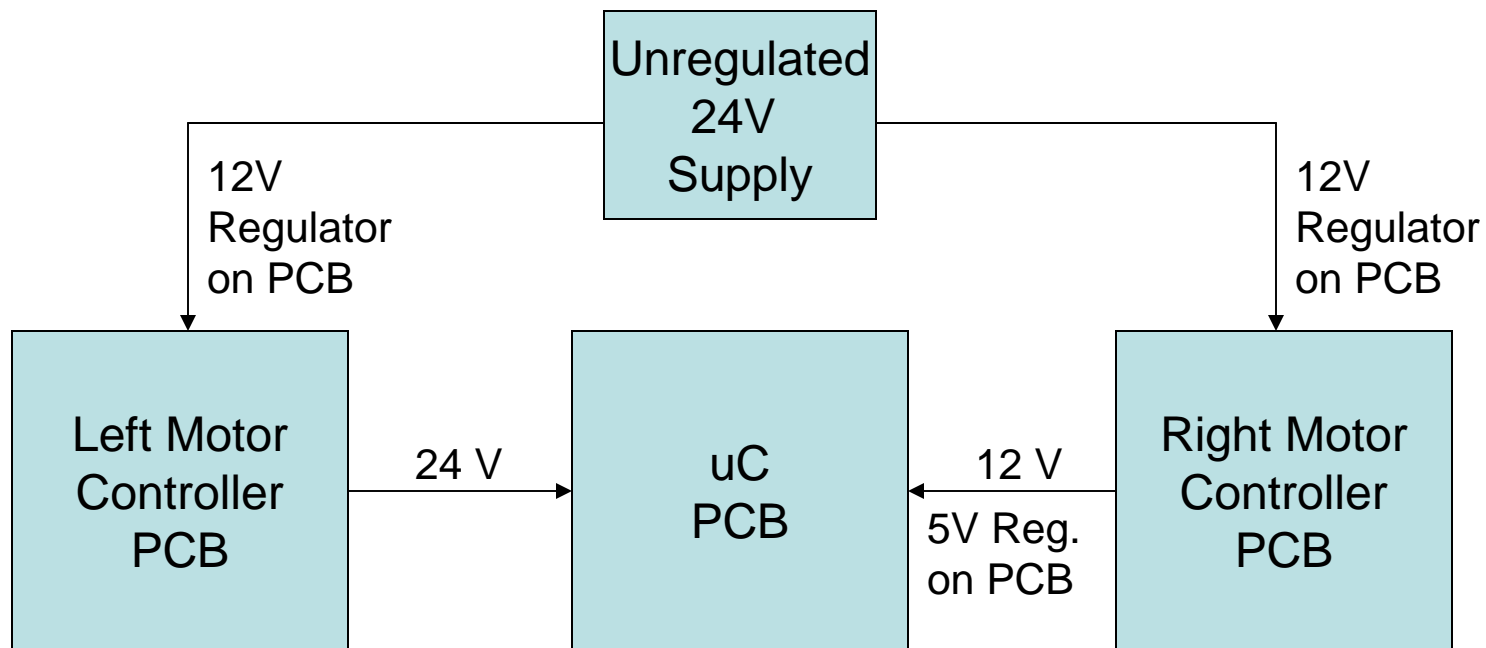
- ◎ 3 PCBs Advantages
 - ◎ Separate switching circuit from sensitive digital signals



Circuit Overview

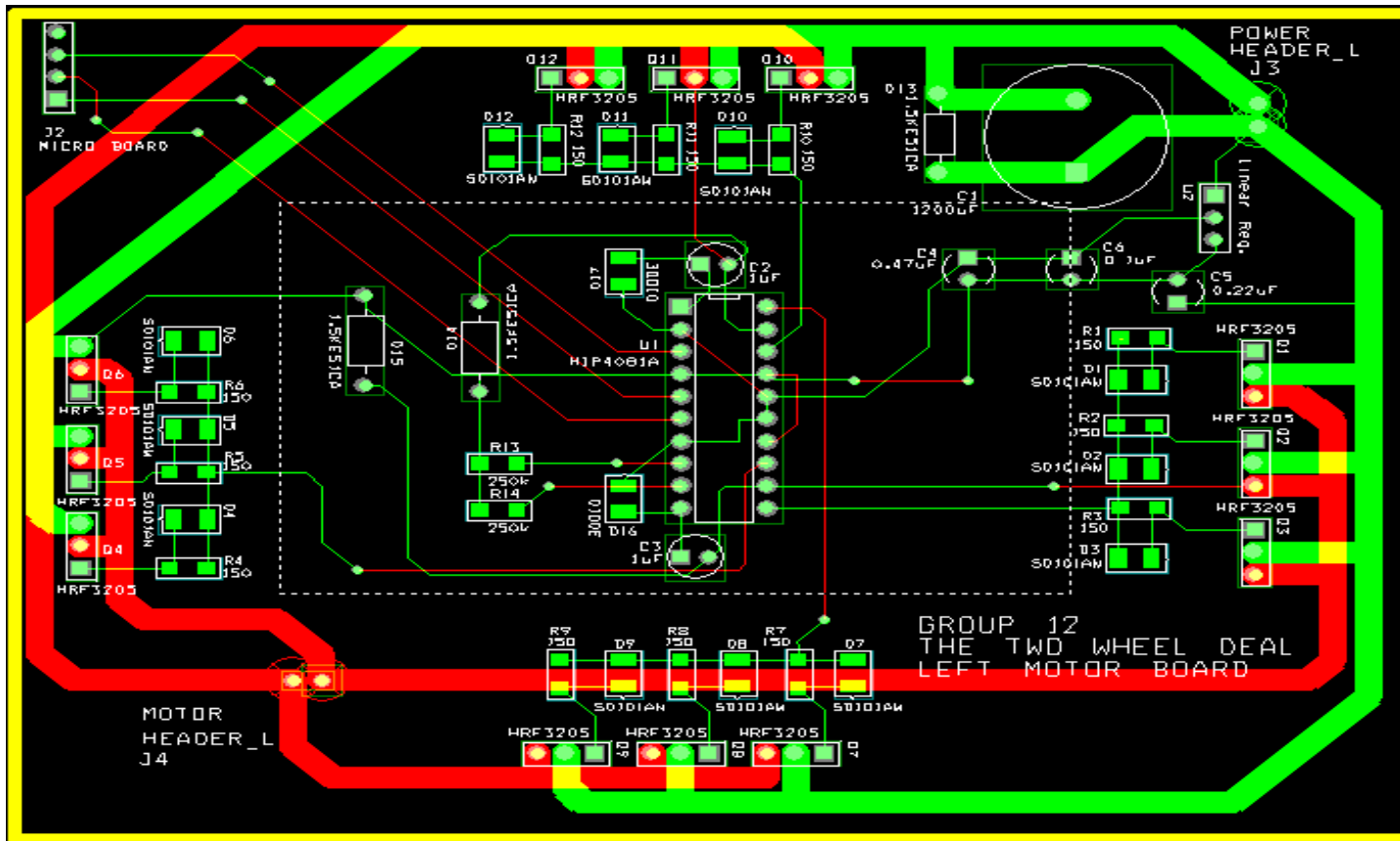
Power Consideration

- ◎ 3 PCBs Disadvantages
 - ◎ More power supply connections
 - ◎ More parts – Regulators, Connectors



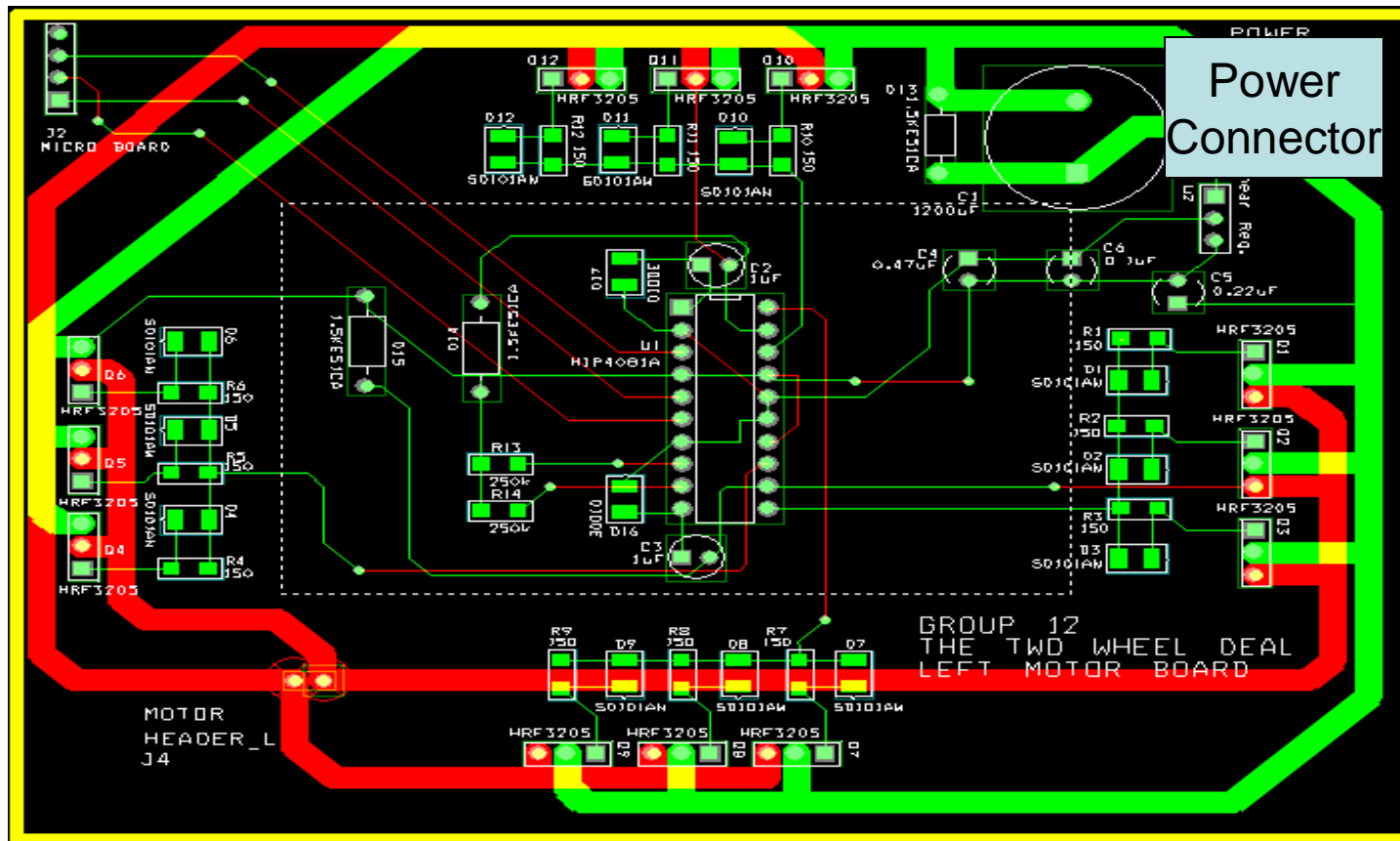
Motor Controller Physical Layout

○ Overview



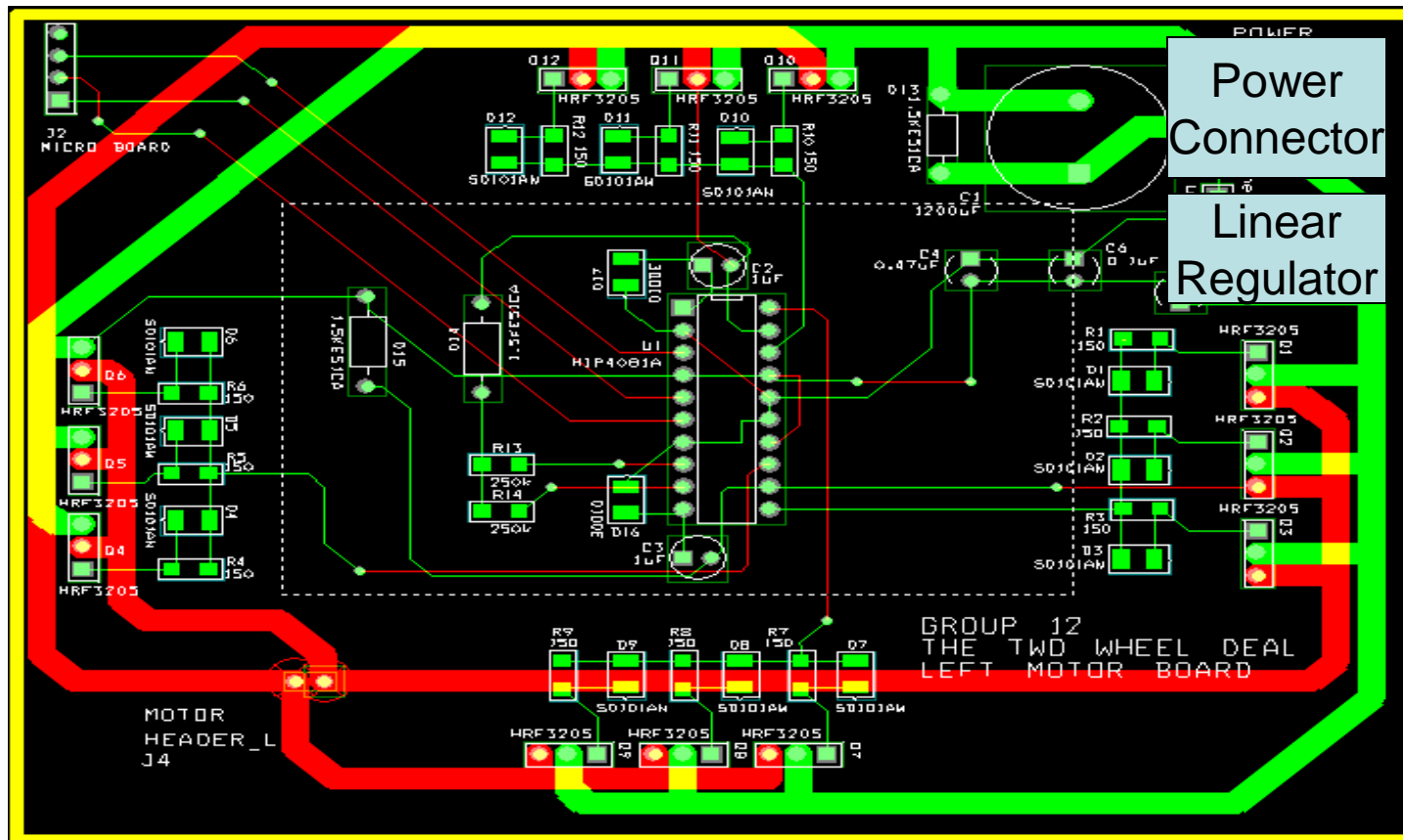
Motor Controller Physical Layout

◎ Power Connector



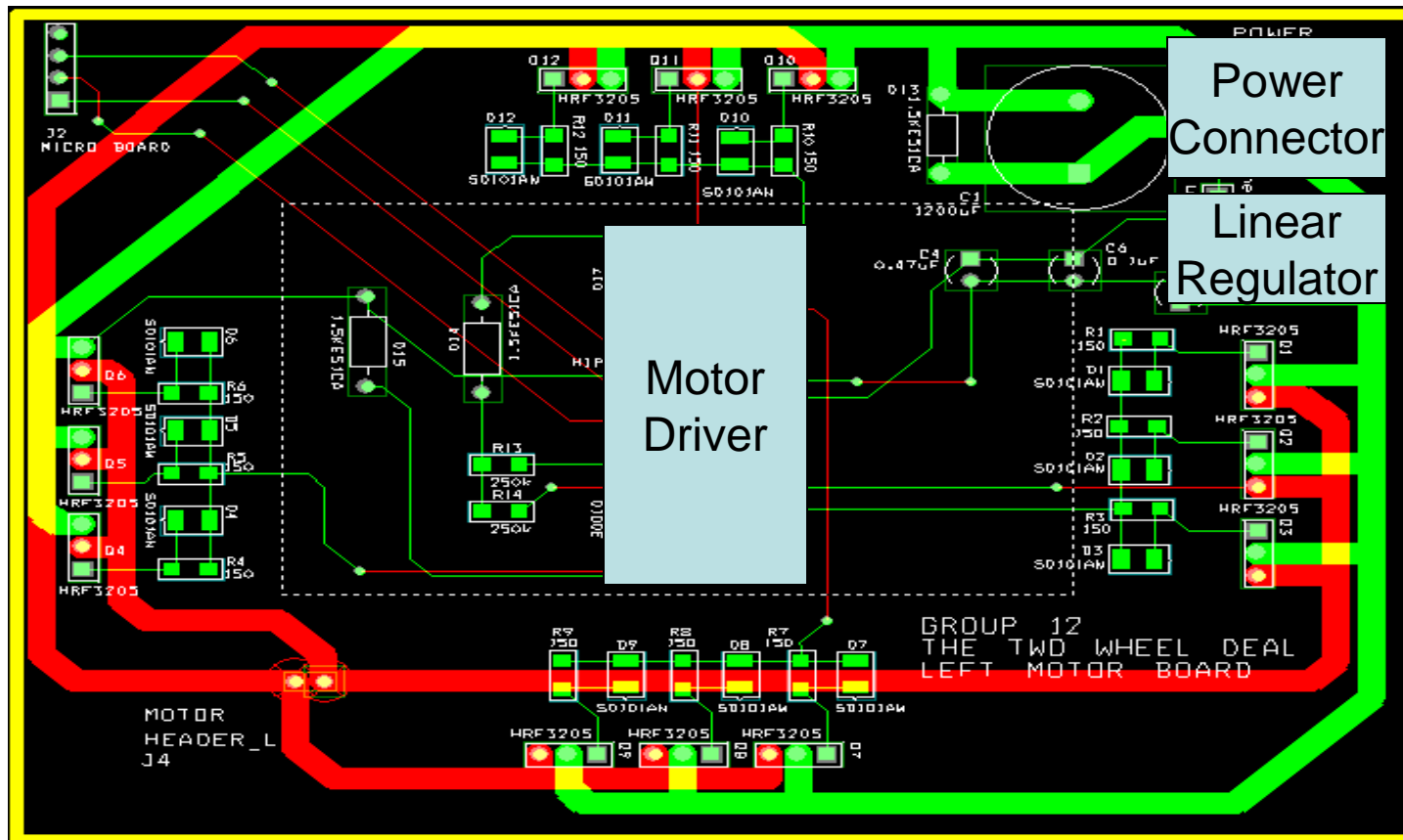
Motor Controller Physical Layout

Linear Regulator



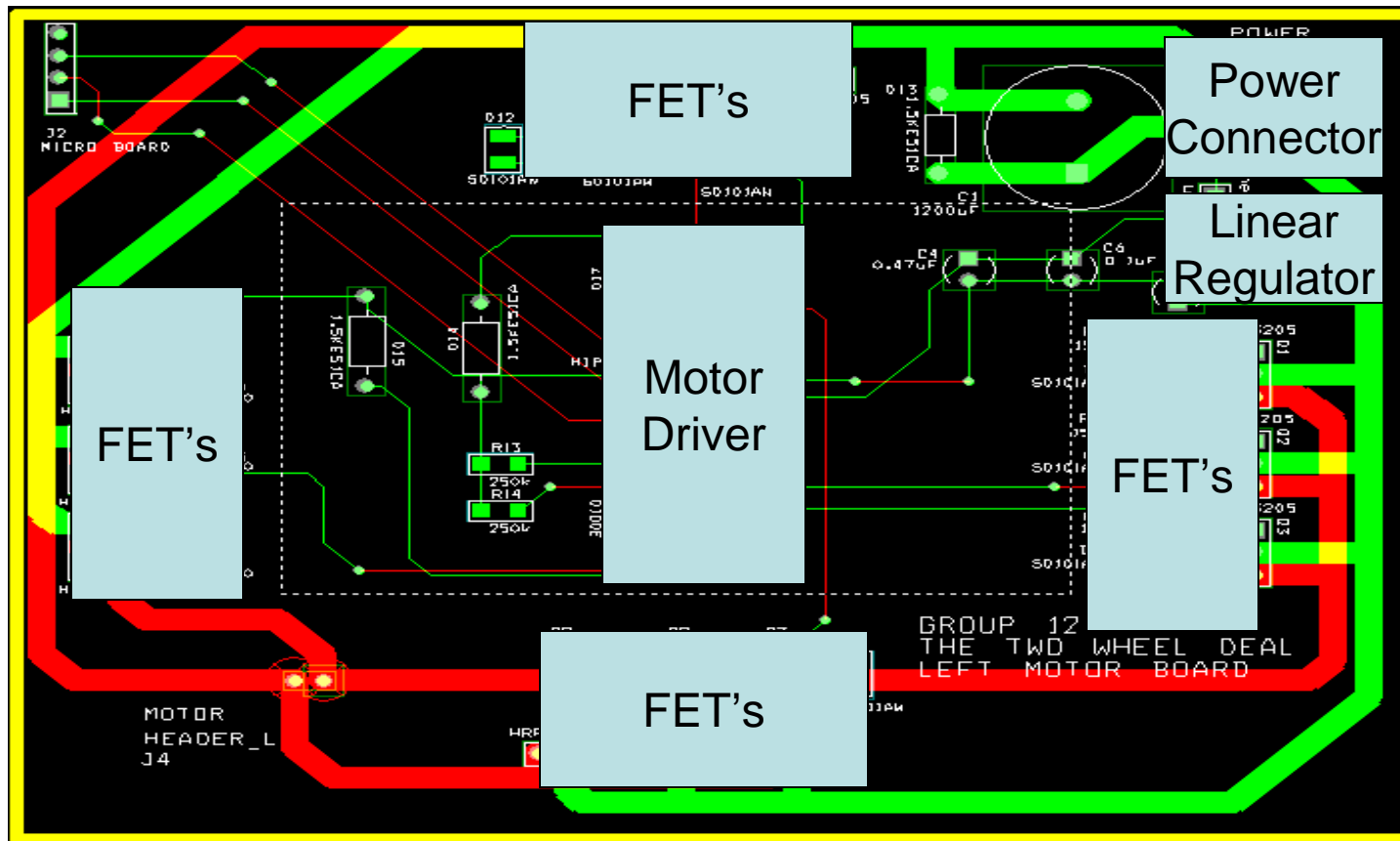
Motor Controller Physical Layout

Motor Driver



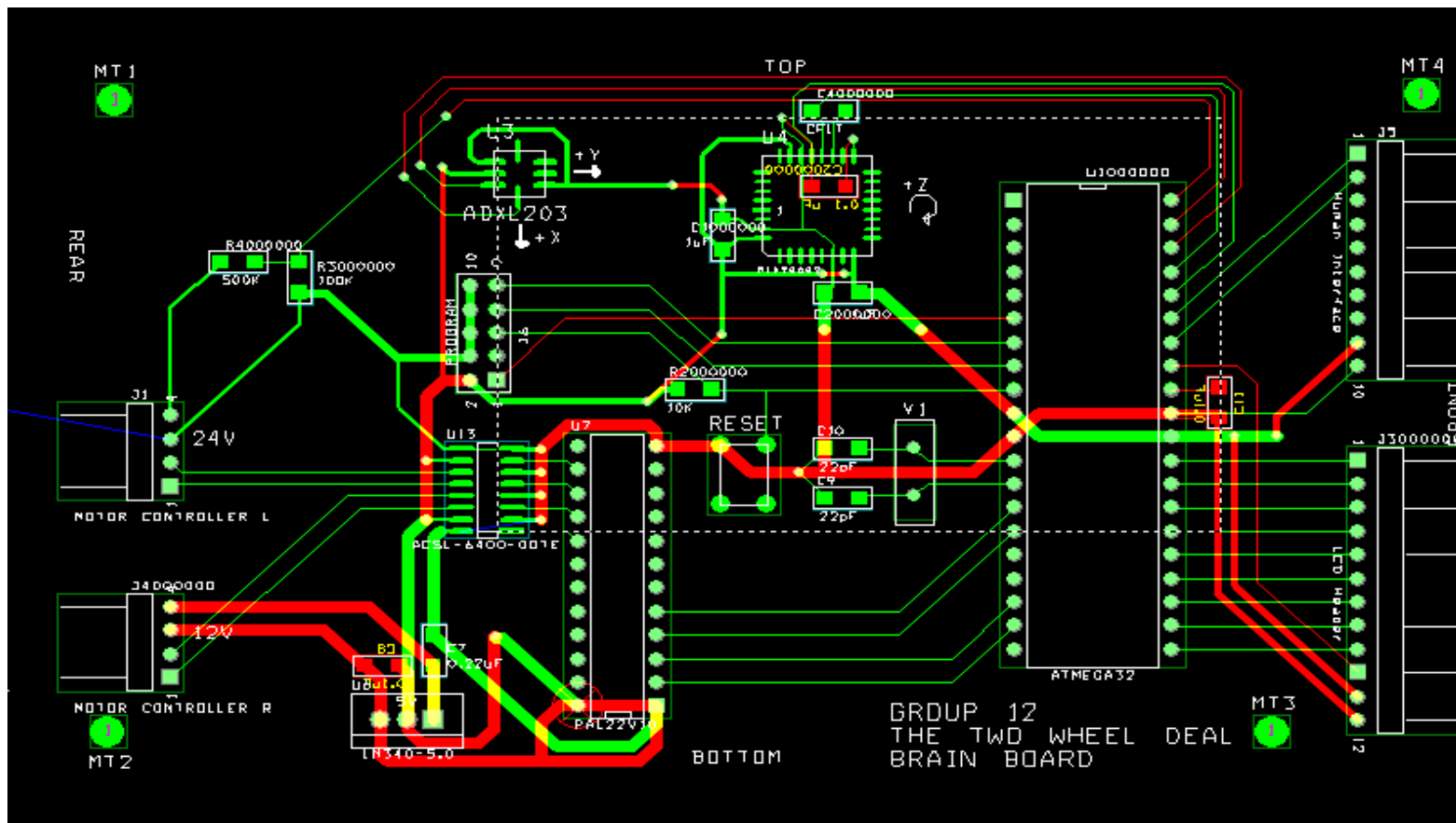
Motor Controller Physical Layout

- Switching Transistors



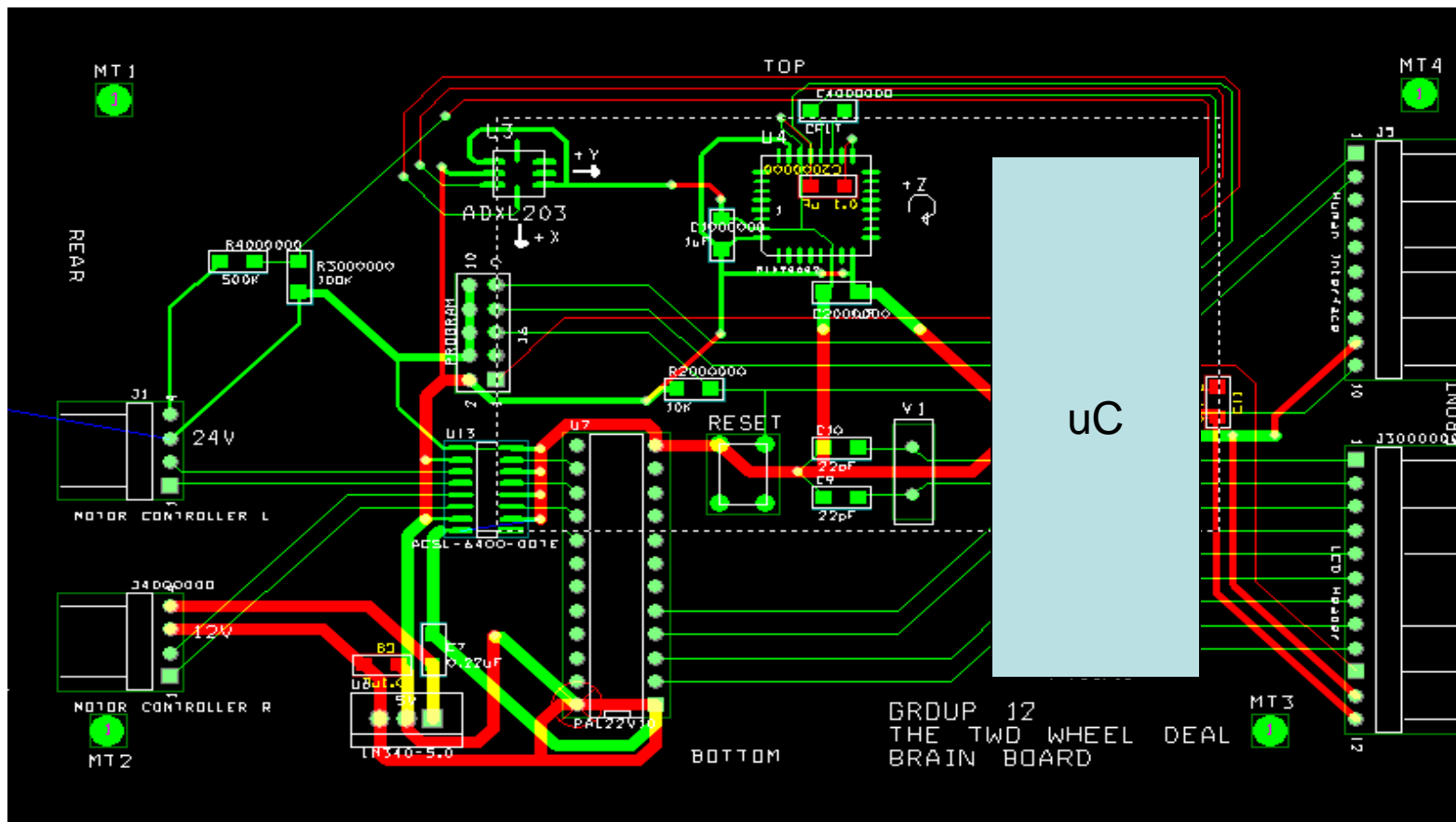
Microprocessor PCB Physical Layout

○ Overview



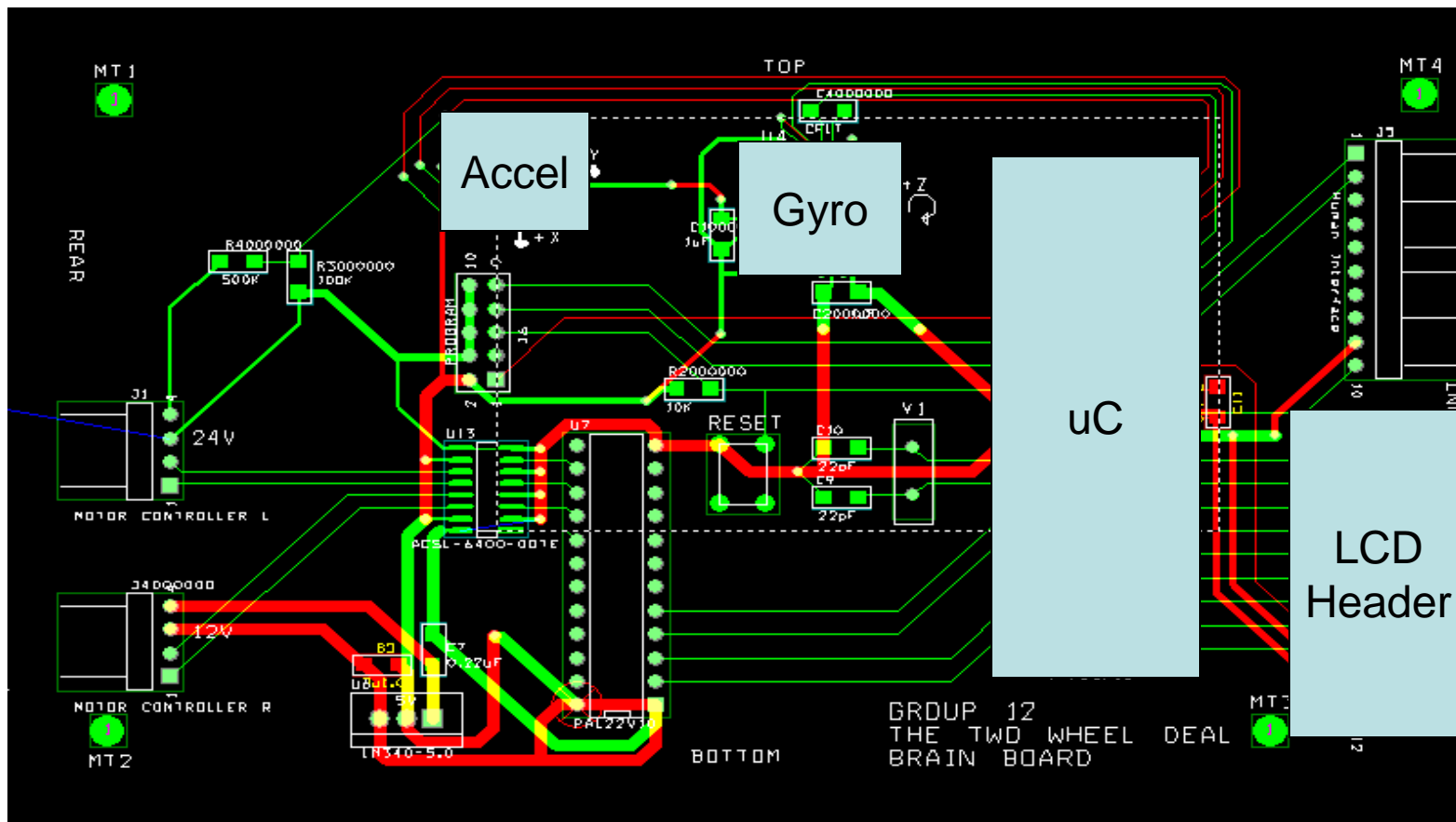
Microprocessor PCB Physical Layout

Microprocessor



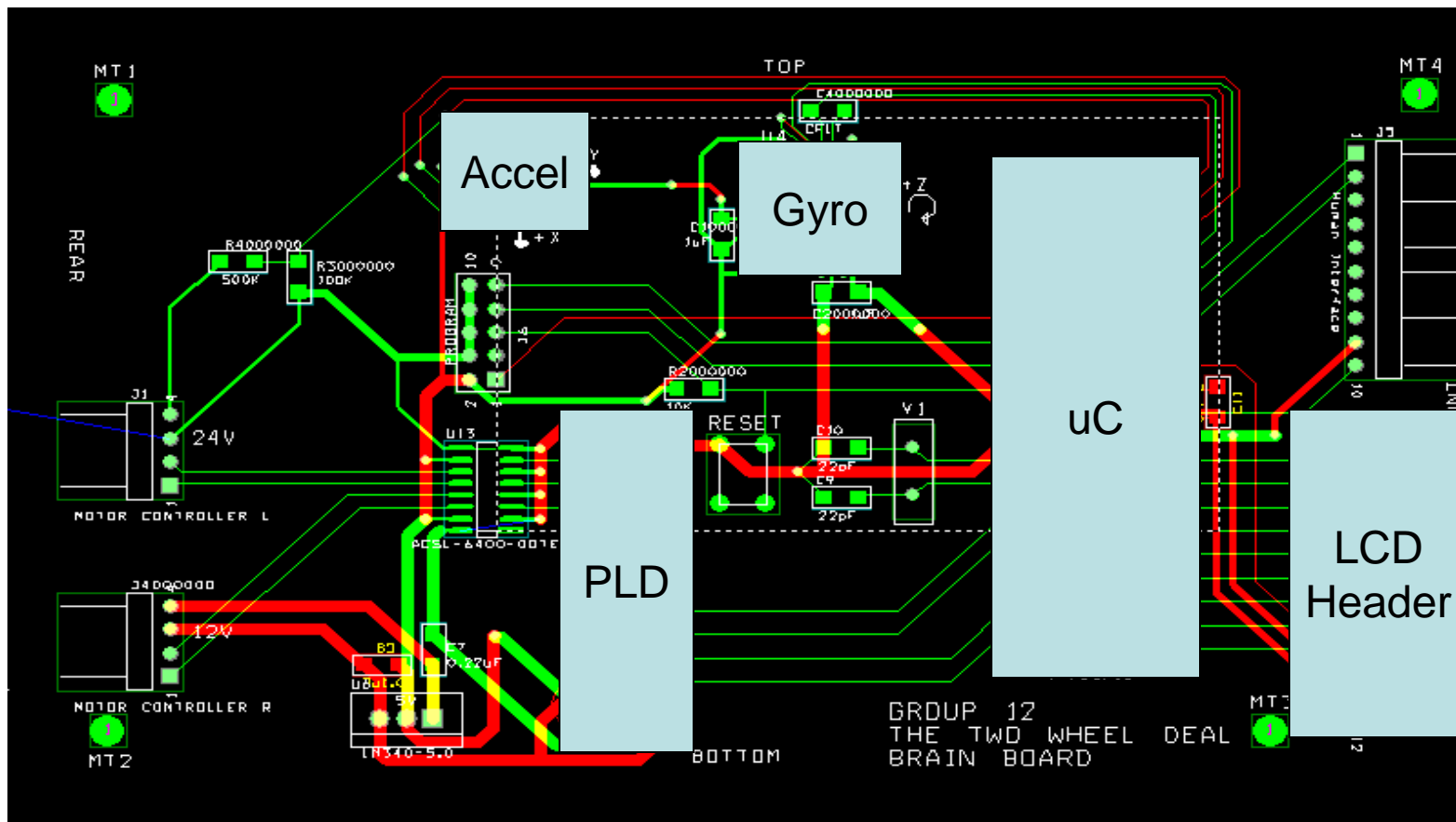
Microprocessor PCB Physical Layout

Input Sensors



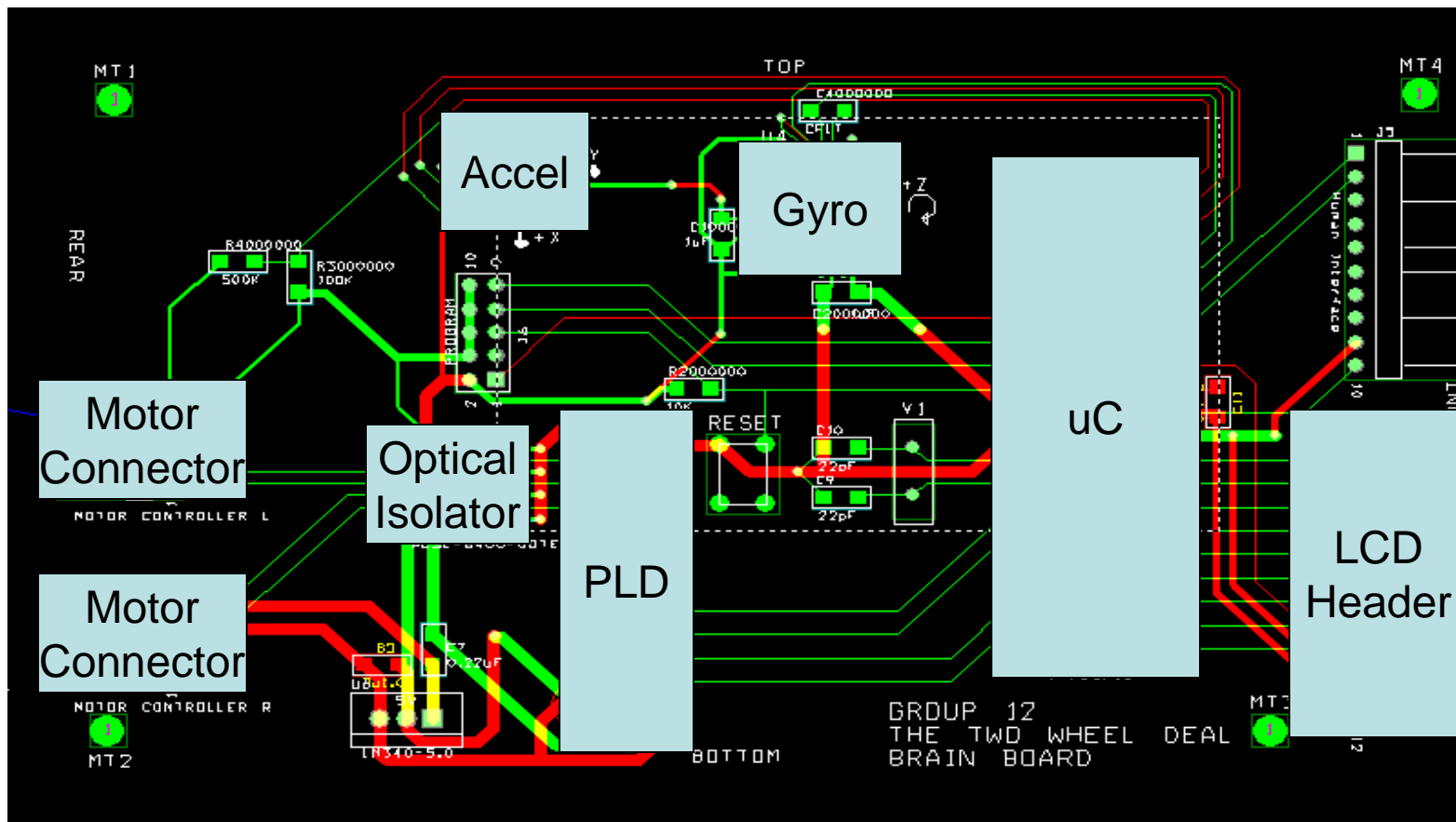
Microprocessor PCB Physical Layout

◎ PLD Motor Driver Interface



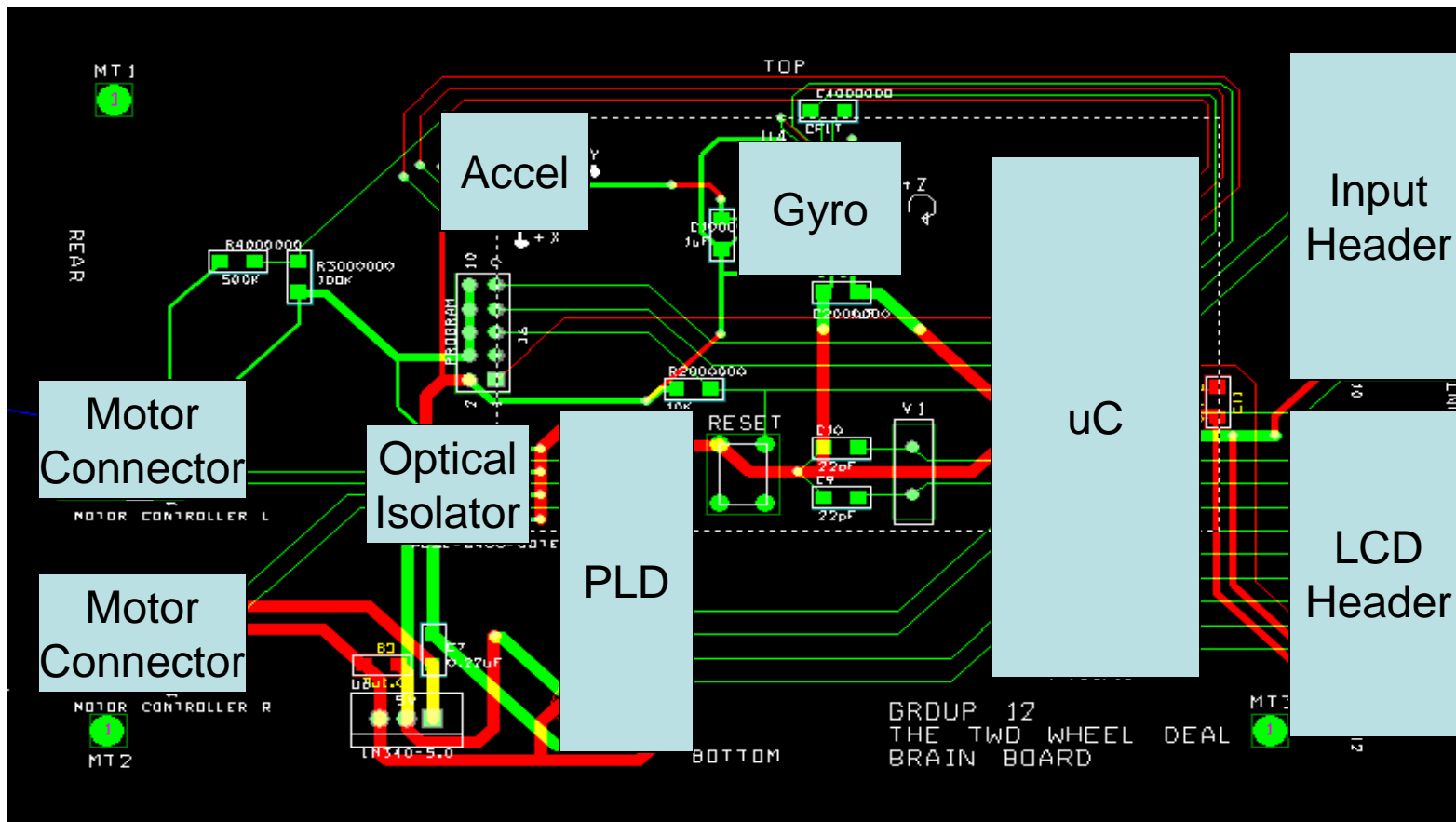
Microprocessor PCB Physical Layout

- Optical Isolators and Motor Connectors



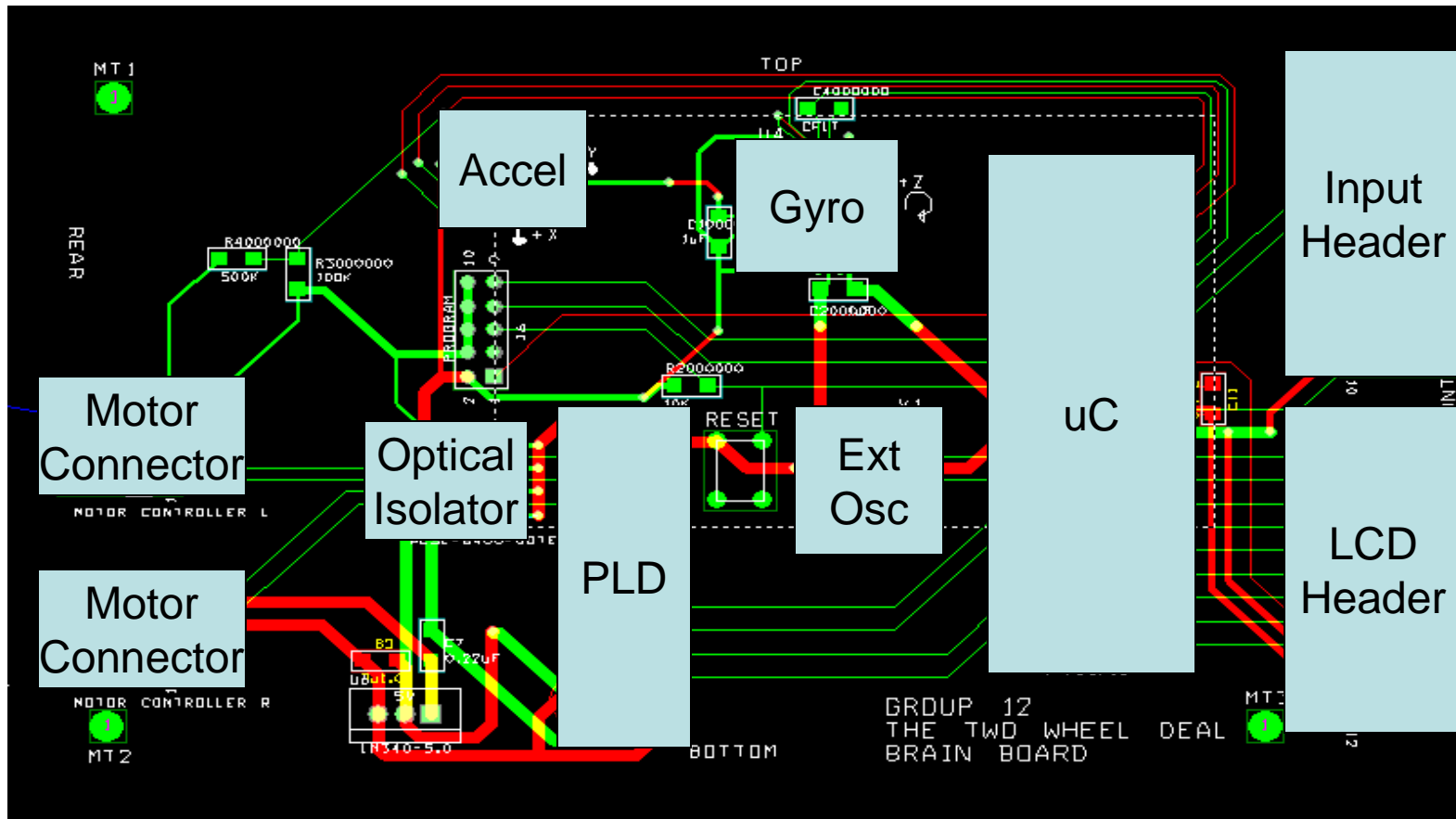
Microprocessor PCB Physical Layout

◎ Input Header



Microprocessor PCB Physical Layout

- External Oscillator



Questions?