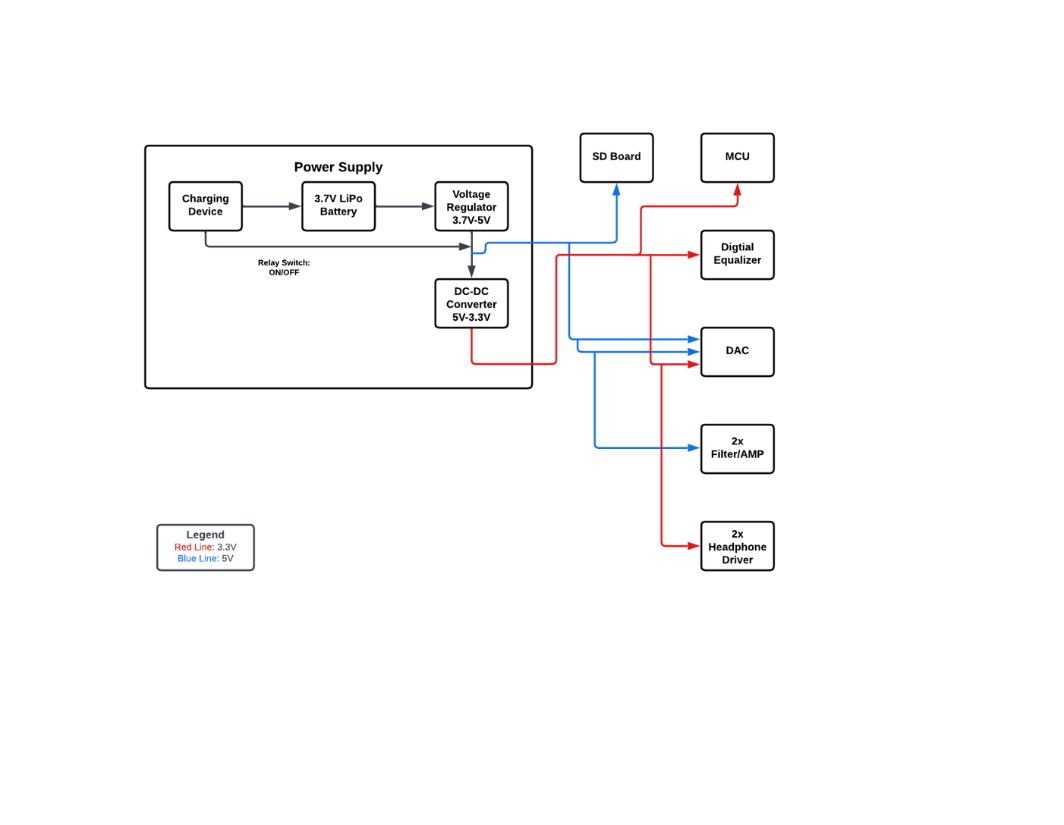
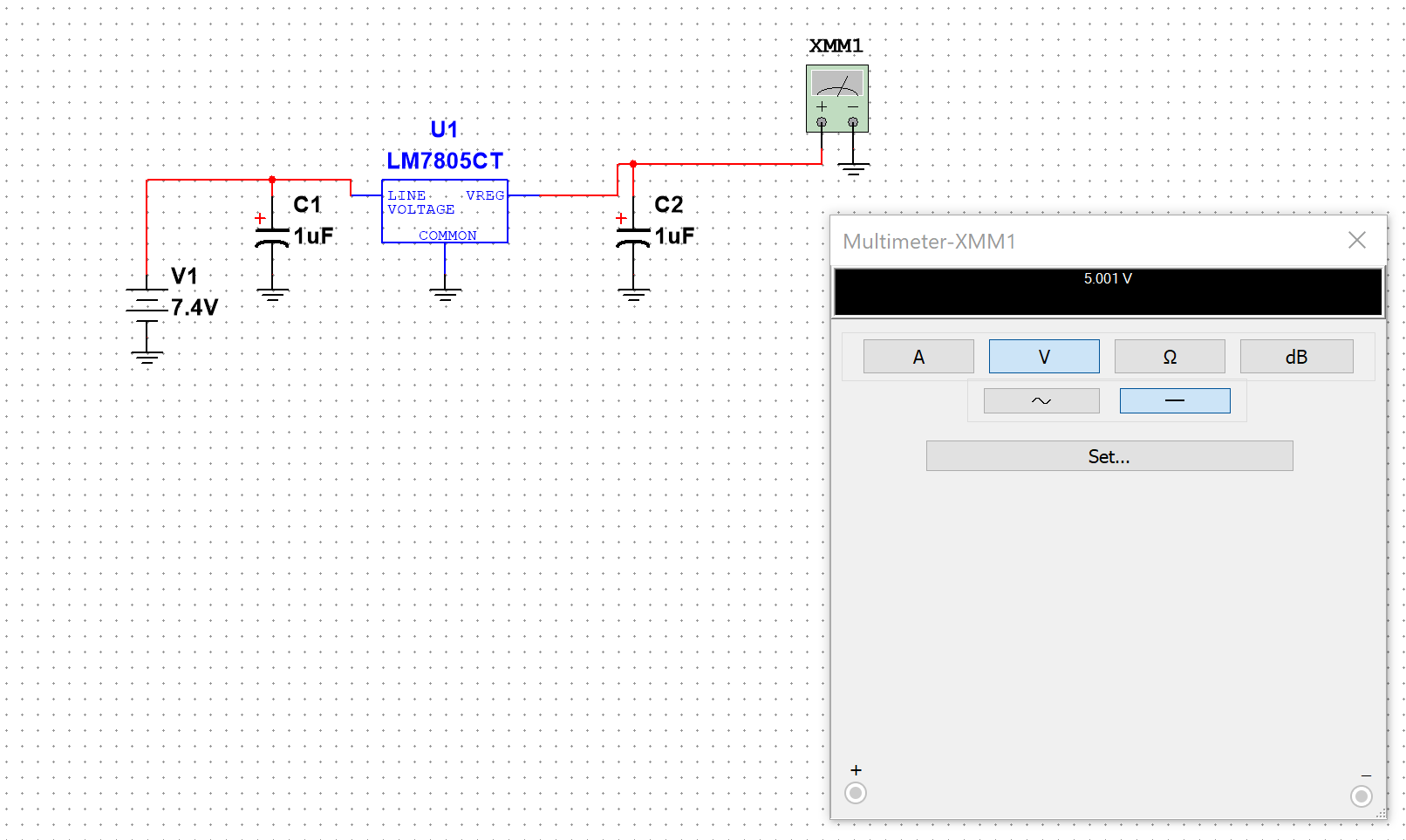
**ECEN403 Validation Document – Power and Mechanical Subsystem**

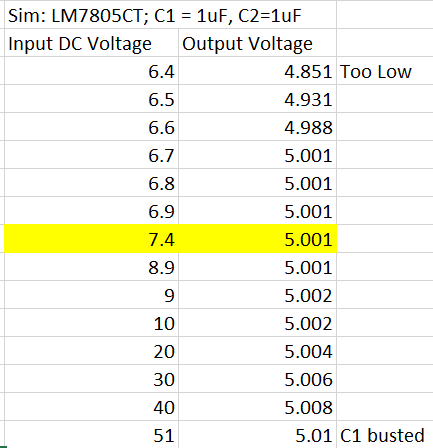
**Power System Diagram:**

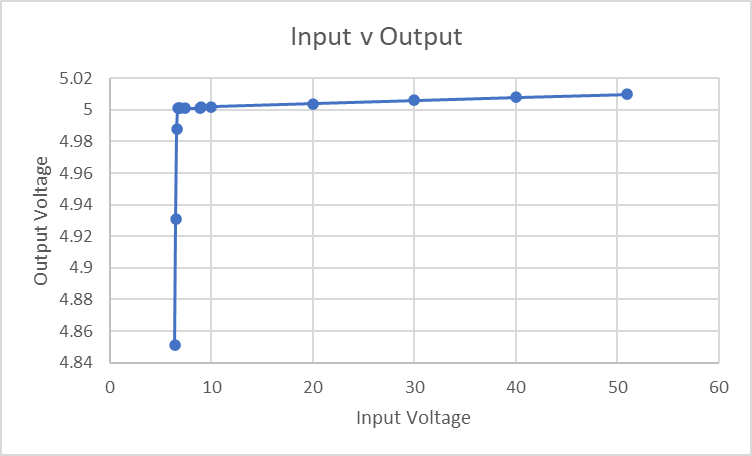
****

**Voltage Regulator (5V output):**

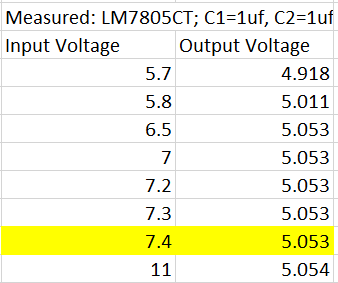
Simulations:

****



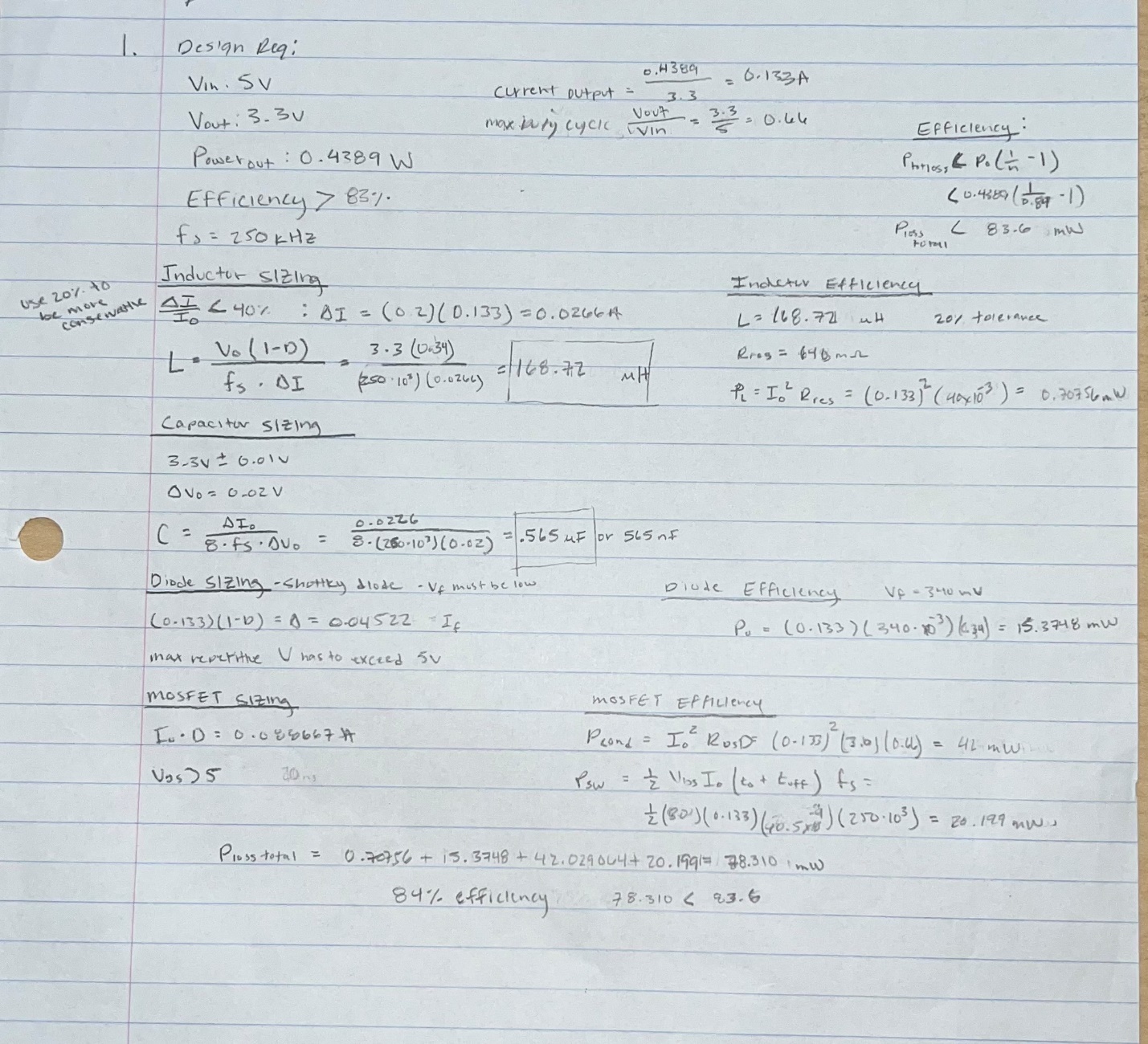
****

Measurements:



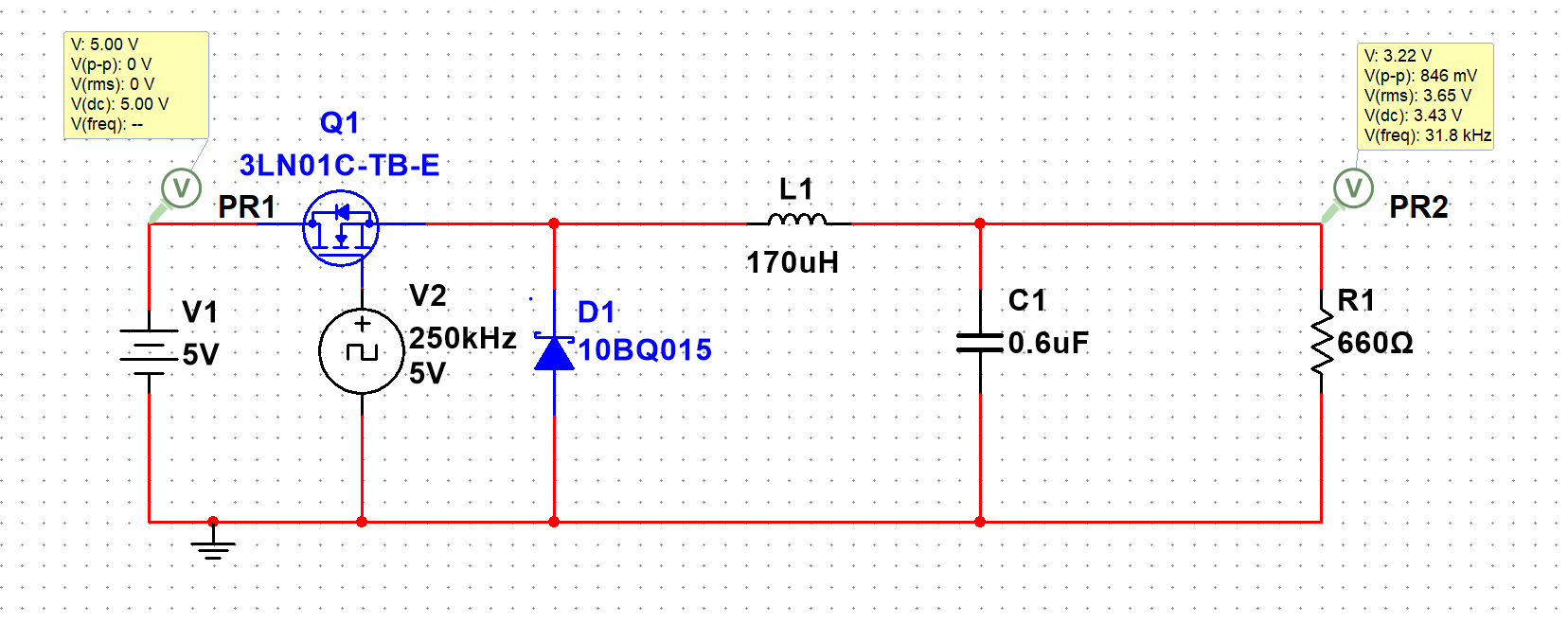
**Buck Converter (3.3V output):**

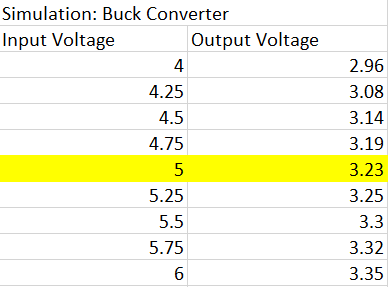
Calculations:

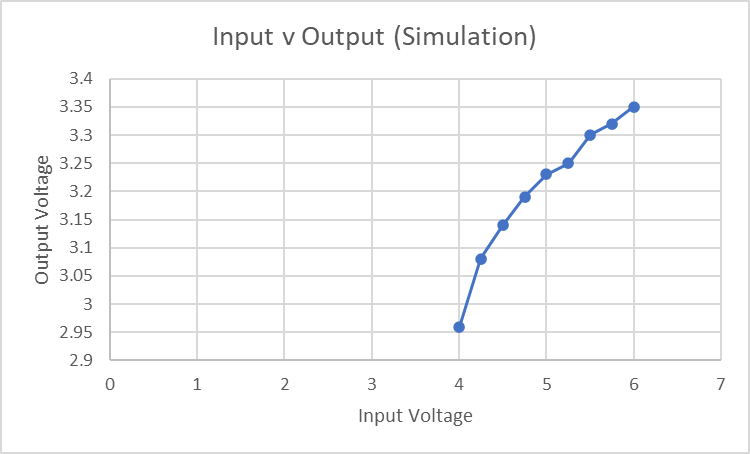


Calculations include: Vin, Vout, Load Power, Load Current, Switching frequency, Duty Cycle, Component Sizing (Inductor, Capacitor, Diode, MOSFET), and Power Loss Efficiency

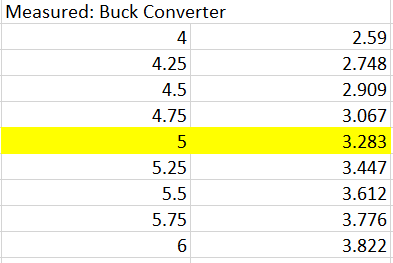
Simulations:

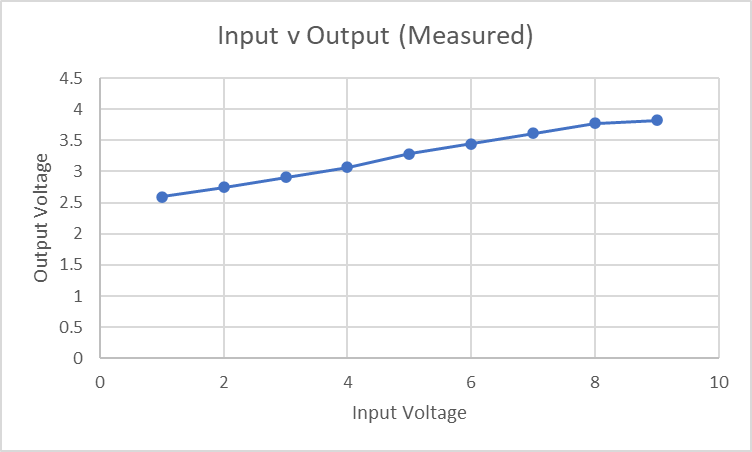






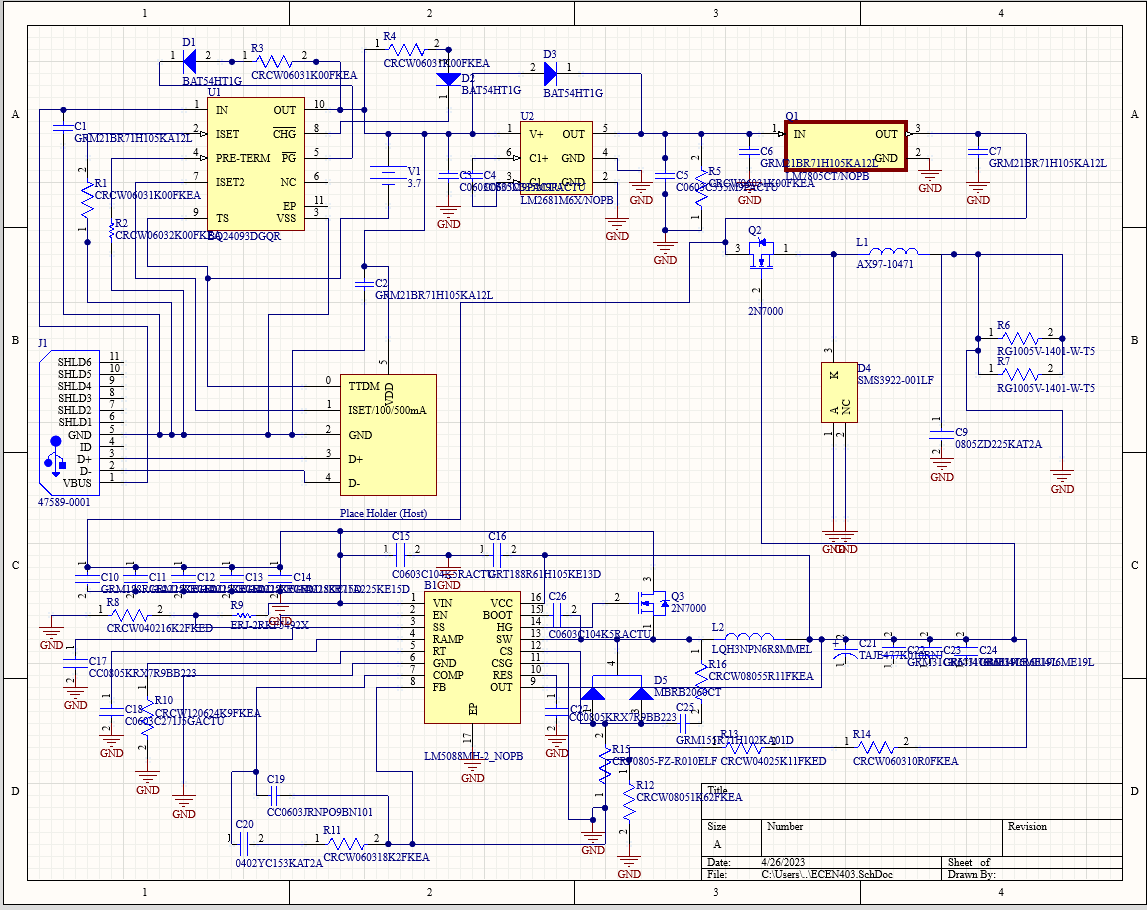
Measurements:





**PCB Design:**

Schematic:



PCB Layout:

