RFID Xpr3ss

Technical Communication Skills Practicum
February 22, 2006

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Schematic

## Overall Schematic
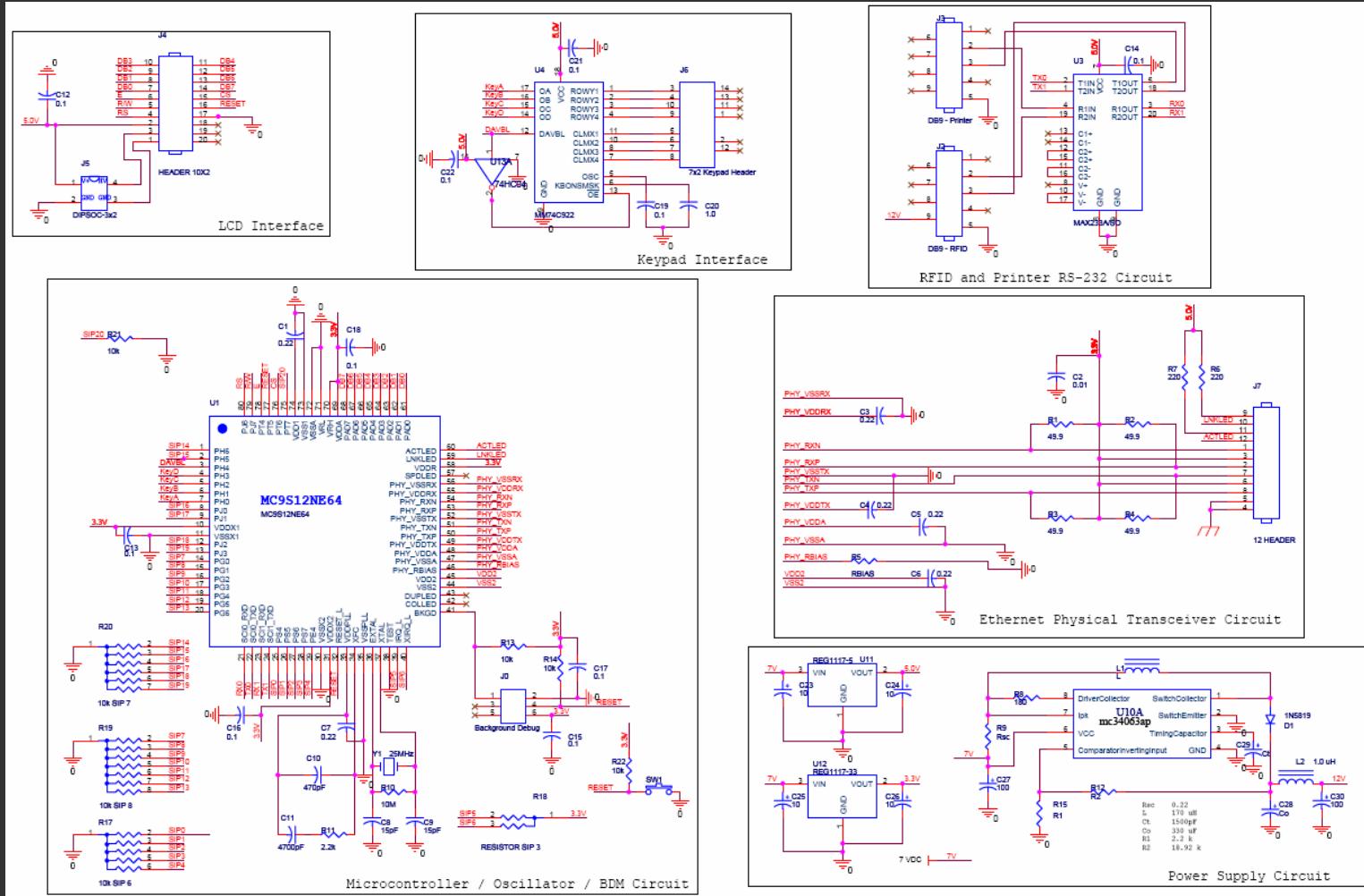
LCD Interface

Keypad Interface

RFID and Printer RS-232 Circuit

Ethernet Physical Transceiver Circuit

Microcontroller / Oscillator / BDM Circuit

Power Supply Circuit

Schematic

RFID Xpr3ss

µC Block

Microcontroller / Oscillator / BDM Circuit

Schematic

LCD Block

LCD Interface

Keypad Interface
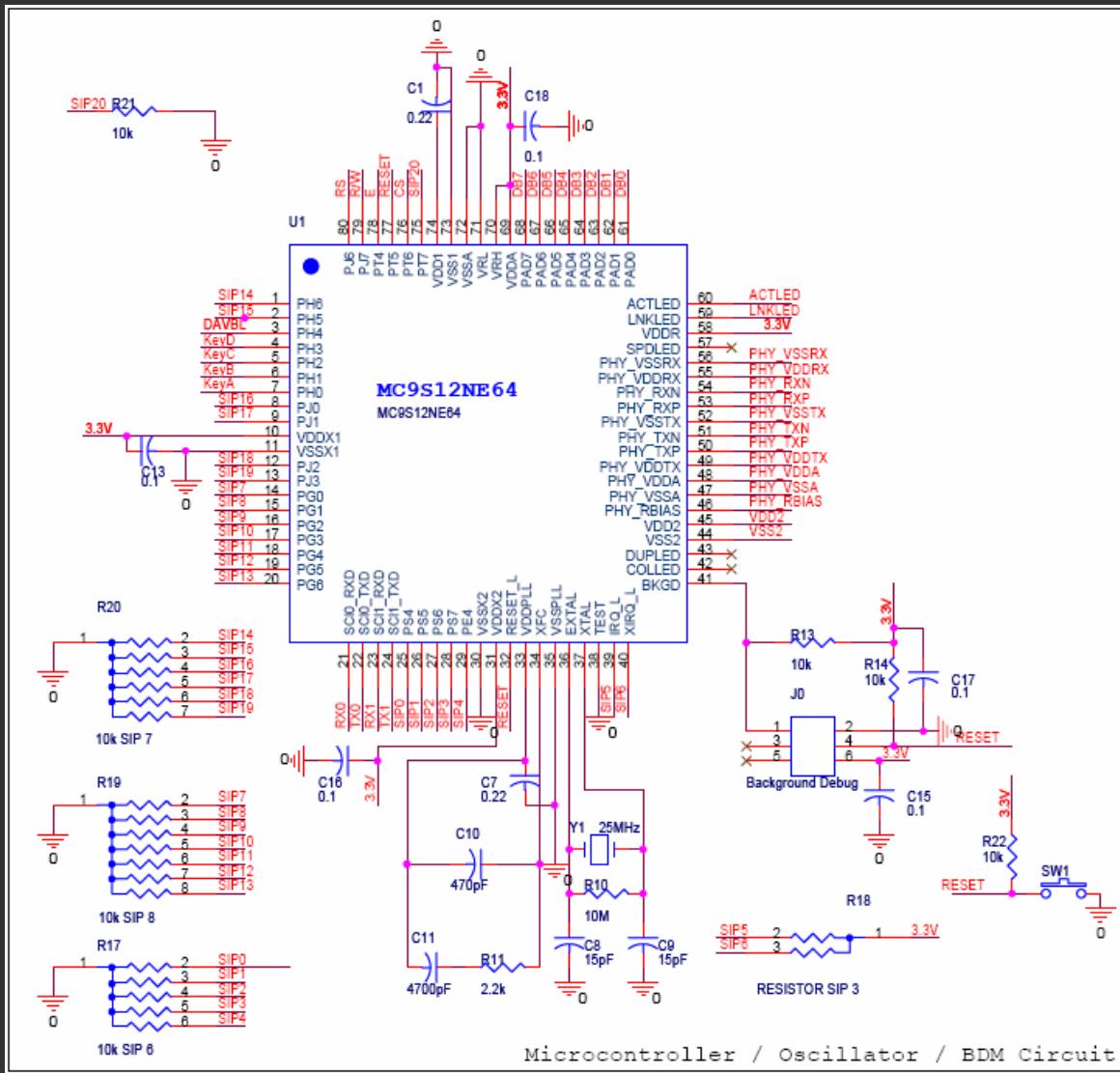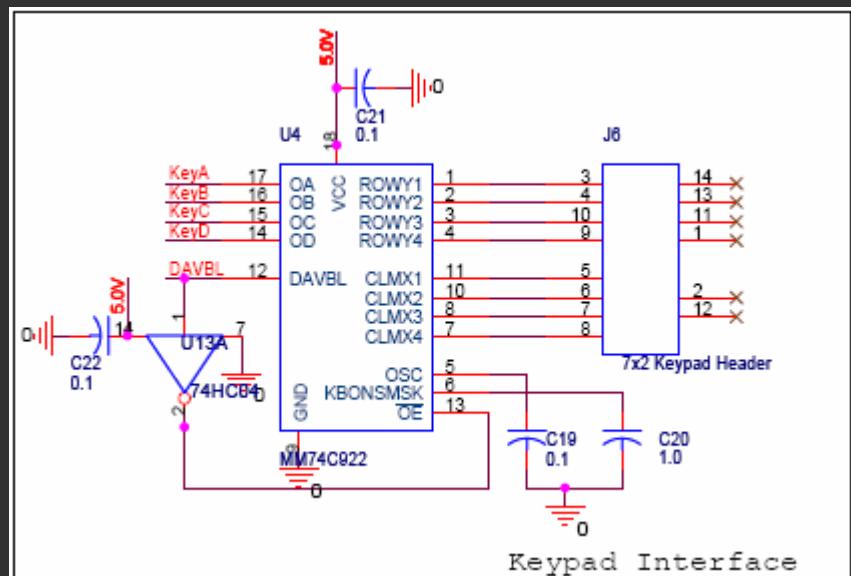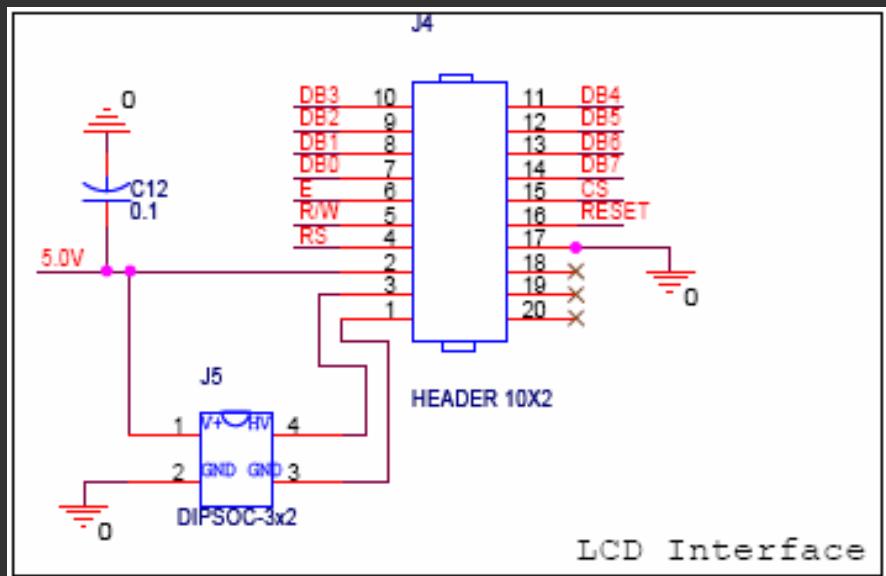
Keypad Block

RS232 Communication Block (RFID / Printer)

RFID and Printer RS-232 Circuit
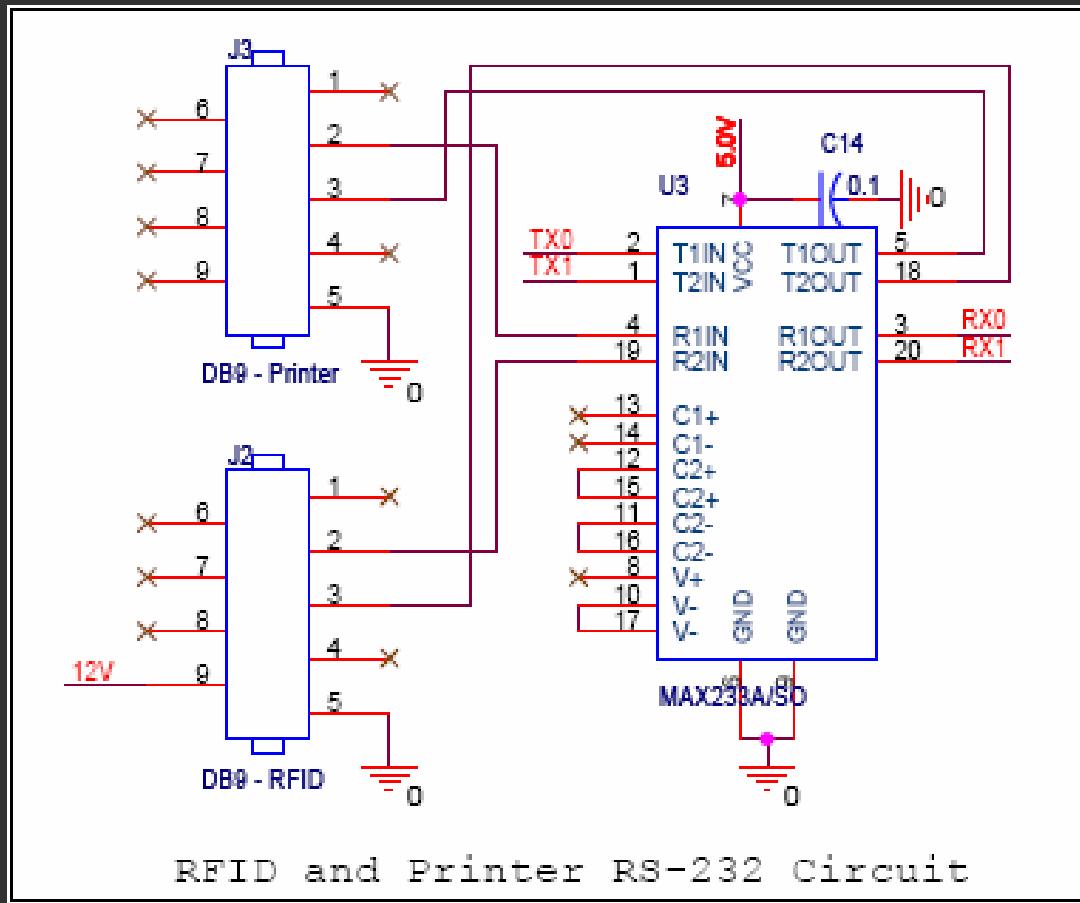
Schematic

EPHY (Ethernet) Block

Ethernet Physical Transceiver Circuit
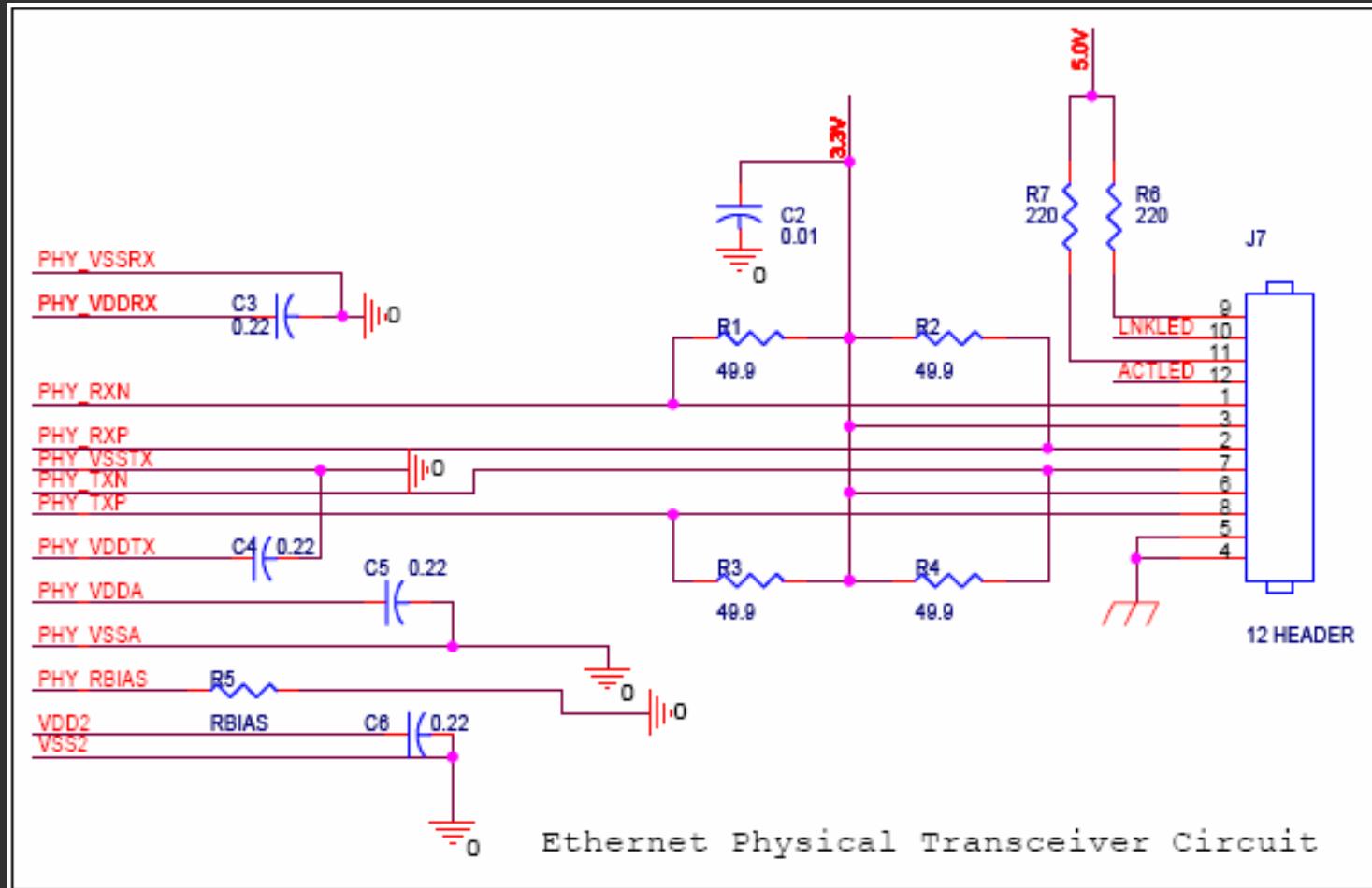
Power Supply Block

Power Supply Circuit
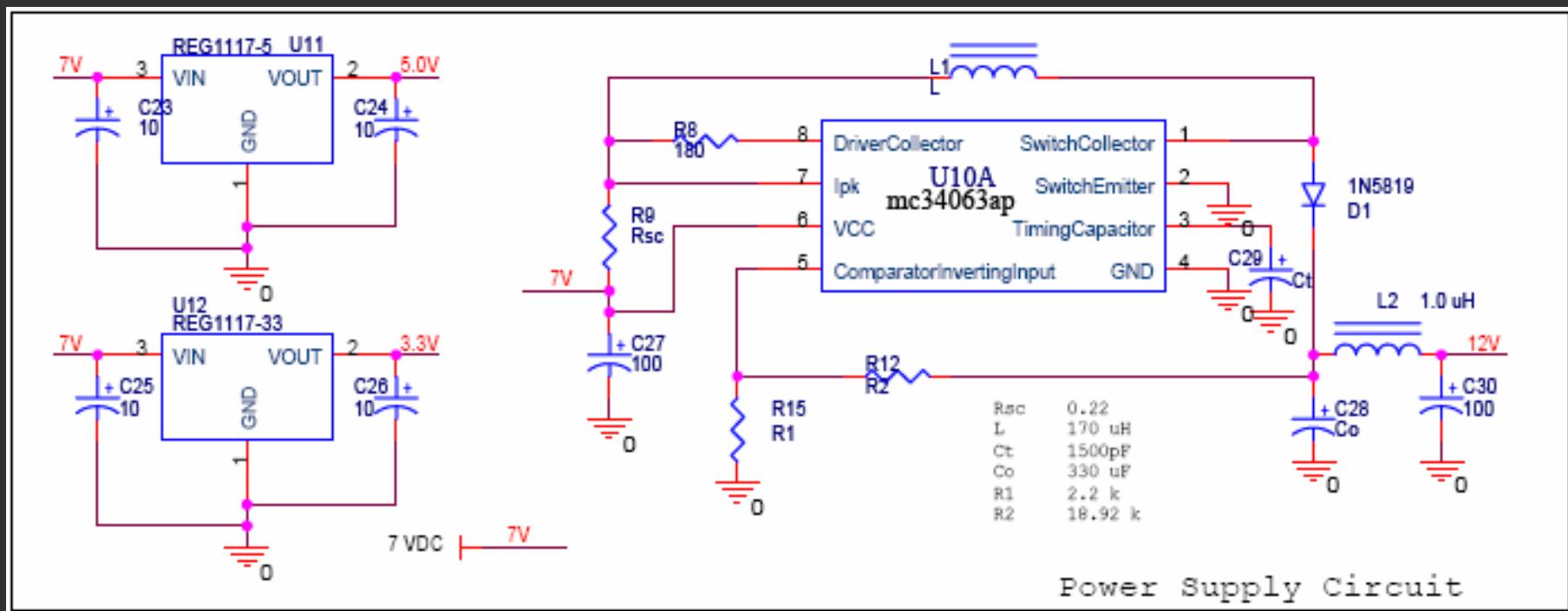
PCB Layout

Overall PCB
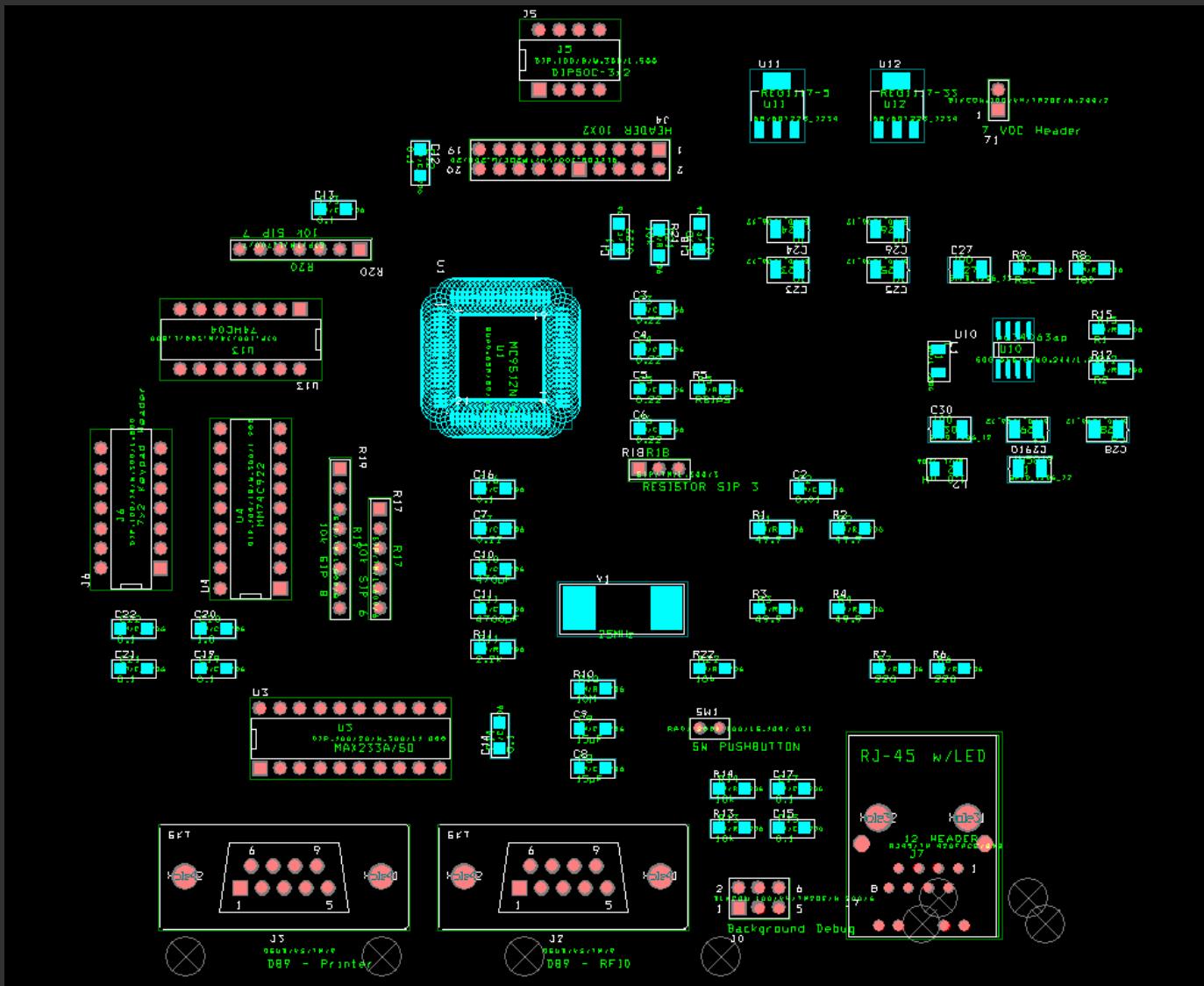
PCB Layout

RFID Xpr3ss

µC / LCD / Keypad
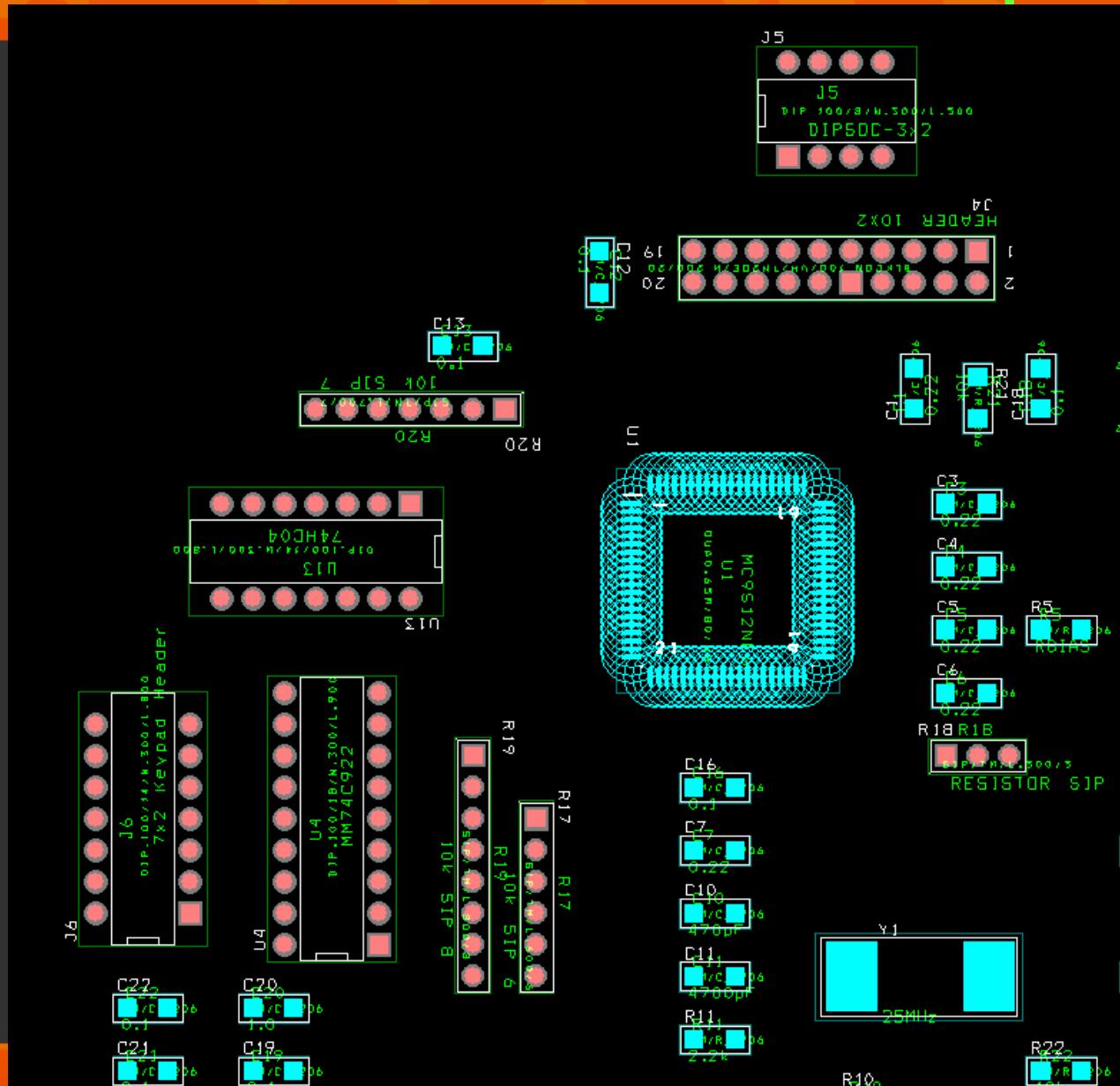
PCB Layout

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Interfaces
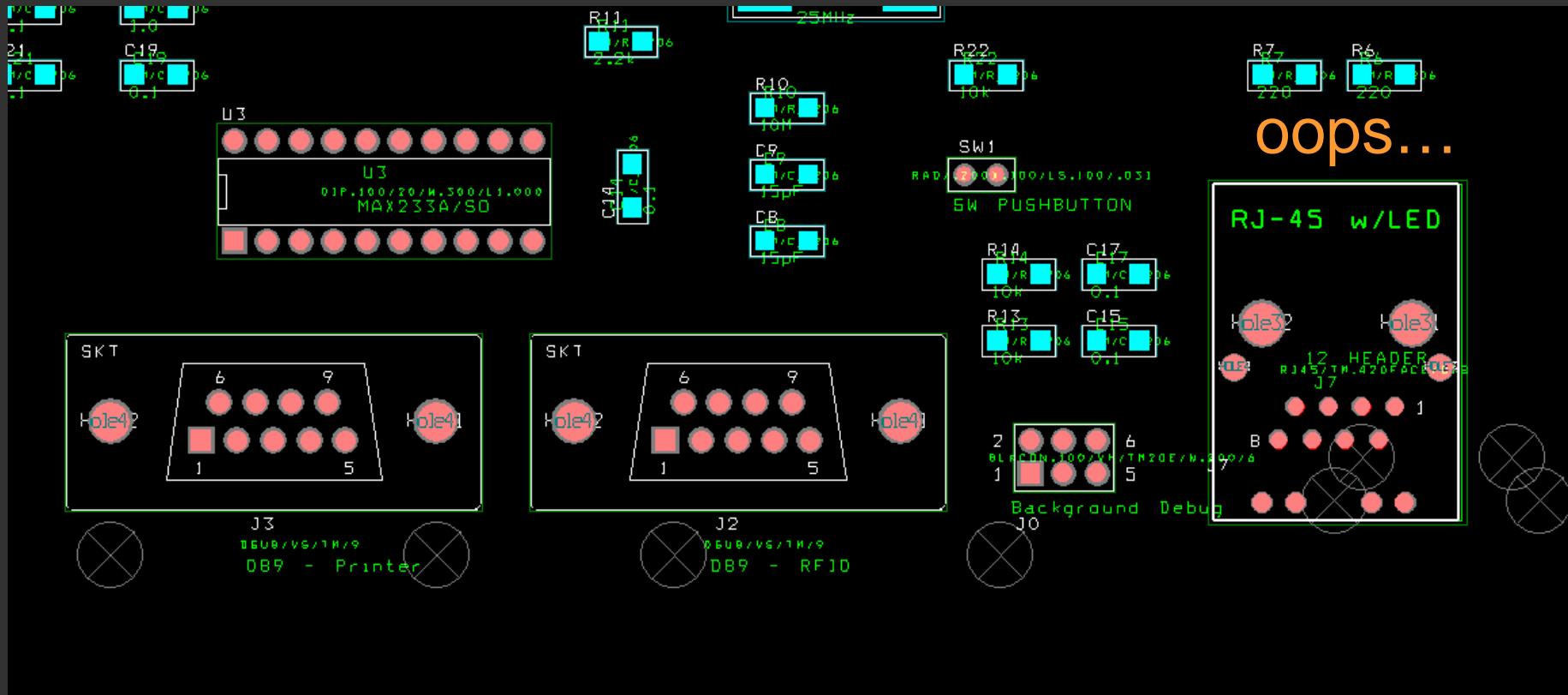
PCB Layout
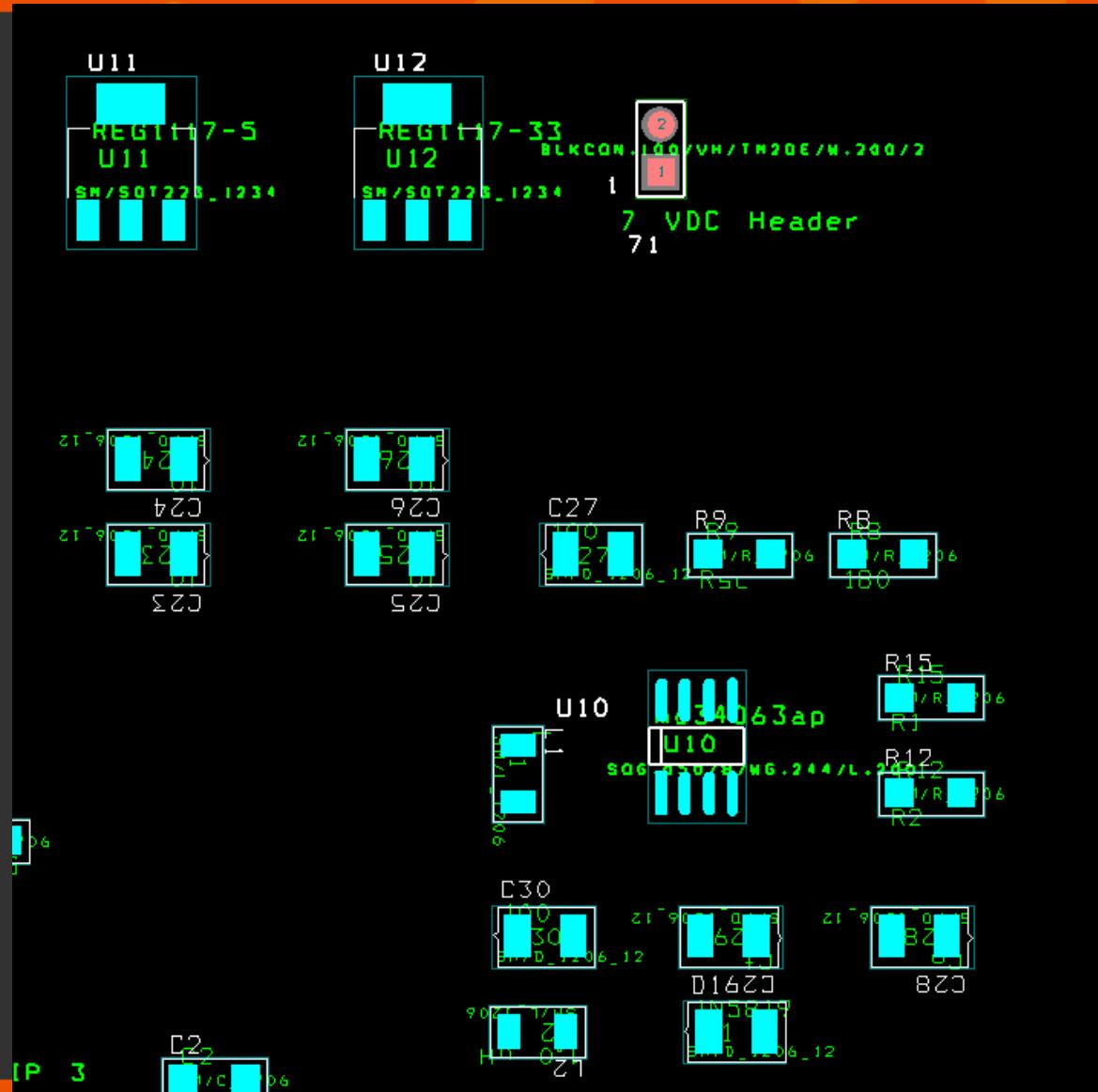
## Power Supply

PCB Layout

Traces…
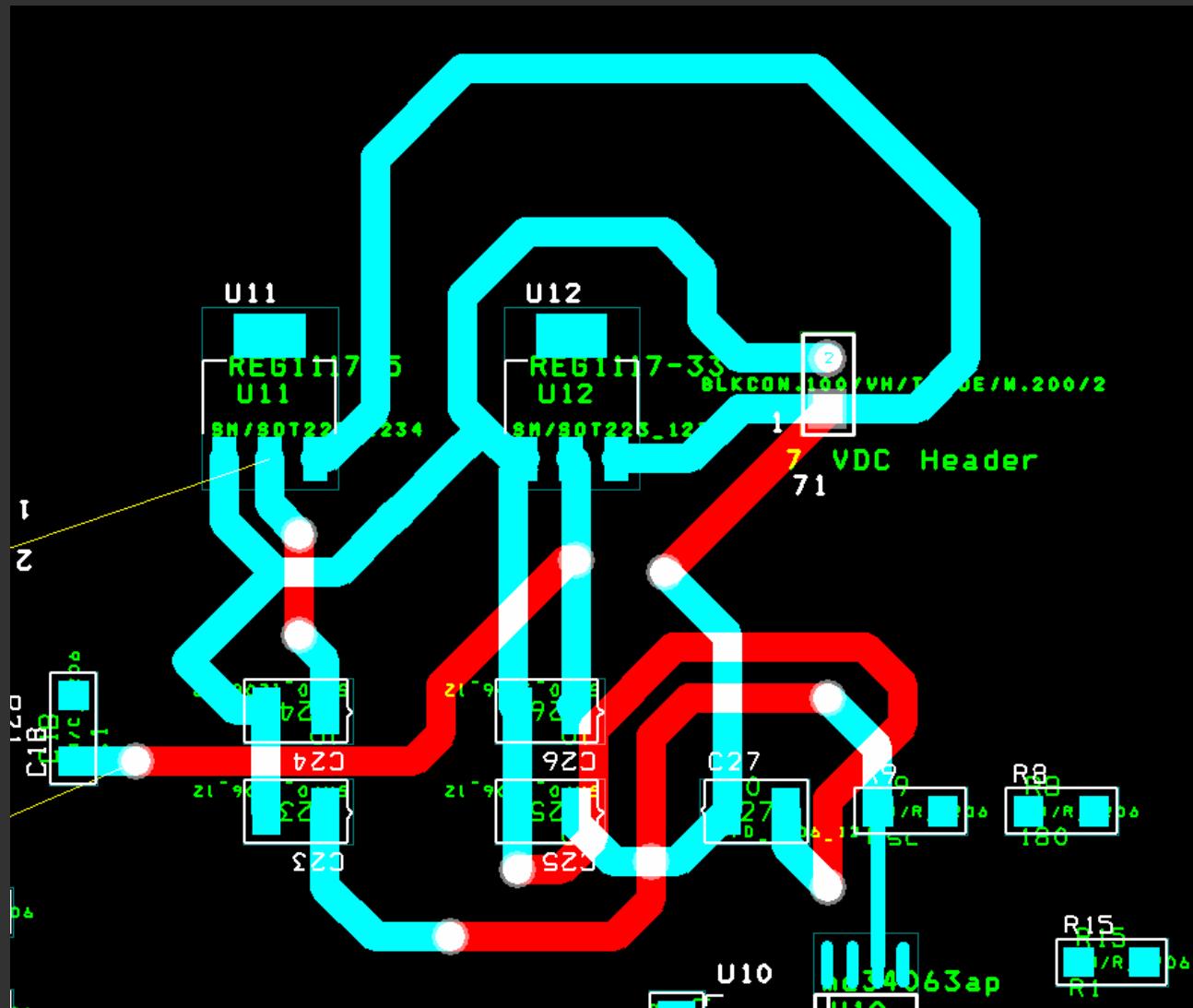
Design Considerations

- Schematic – block placement
  - strategic arrangement of RS232, ethernet, etc. blocks
- Schematic – RFID power supply
  - provide 12V through unused DB9 pins
- PCB – magnetics placement
  - detailed in 9S12NE64 documentation
  - placed within 1 inch of RJ45 jack
- PCB – crystal circuit placement
  - placed as near to the microcontroller as possible
  - grounded to the nearest part's ground
  - minimum traces to reduce noise, potential interference, and signal irregularities