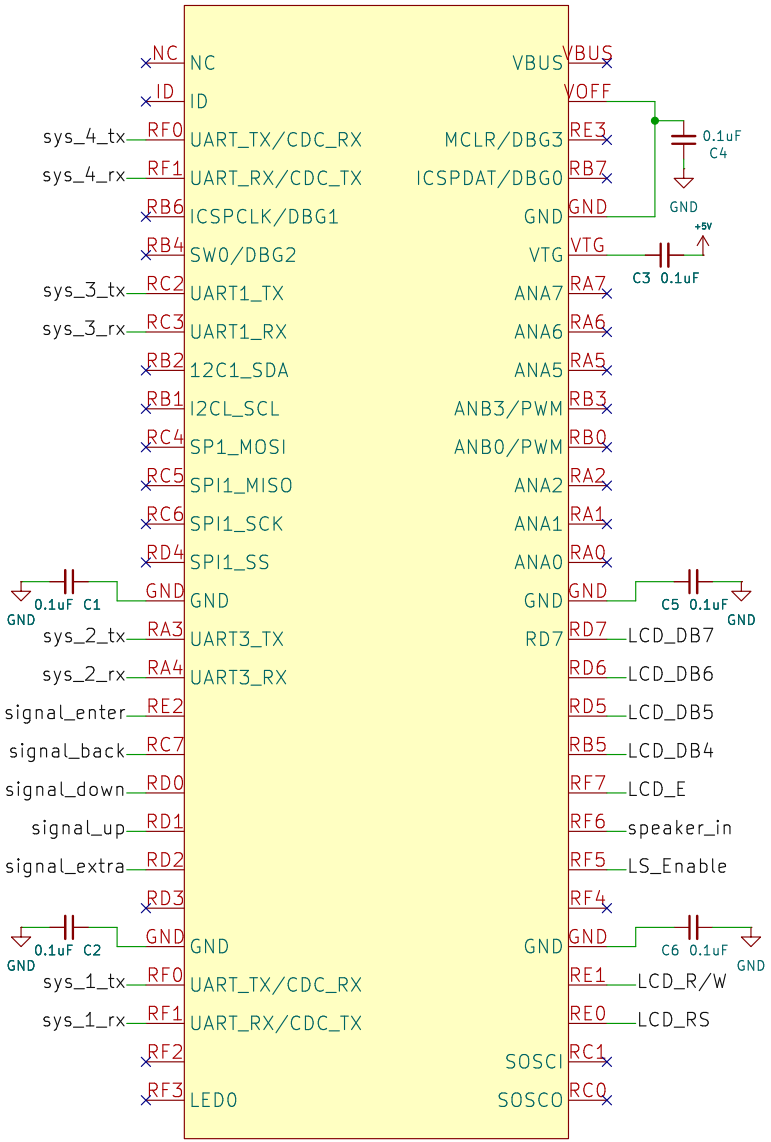
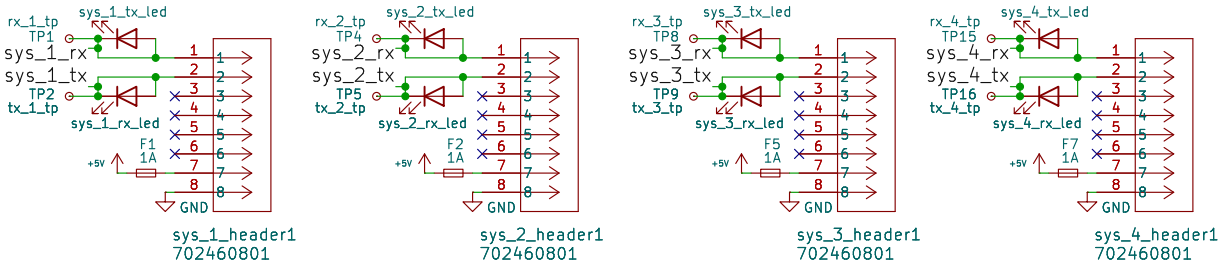
MCU Connections



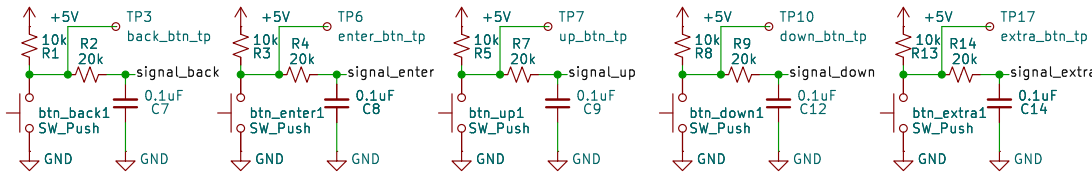
NG_PIC18F57Q43



LEDs will be used to debug UART communication lines

8-pin B2B headers

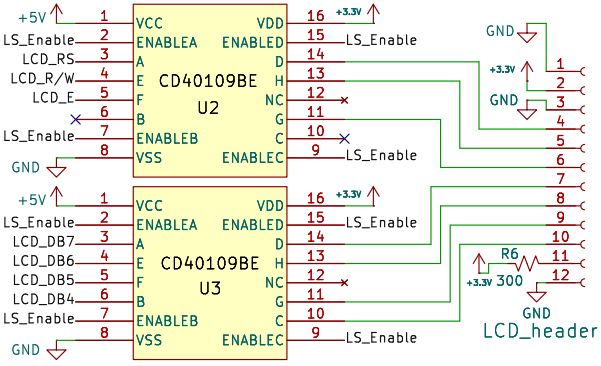
Spare header for debugging



Buttons debounced to require 10ms minimum input

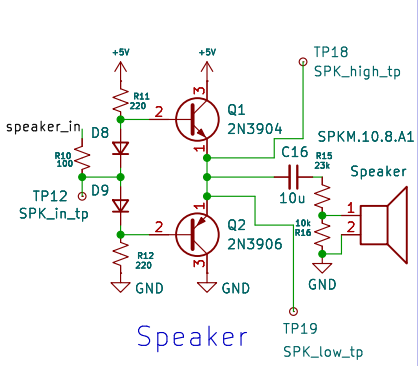
User Control Buttons

Spare button for debugging or expansion



LCD

For connection to NHD-0420AZ-FSW-GBW-33V3 LCD daughterboard. Utilizing 5V signaling from PIC and 2x 74AXP2T45DCH level shifters to perform 3.3V signaling with daughterboard. Daughterboard is operating in 4-bit mode.



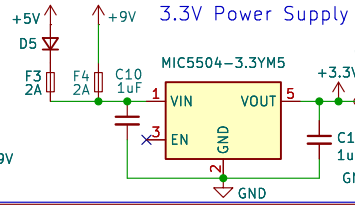
Power Supply

Board may be powered directly, or power can be supplied from another subsystem via 8-pin headers.

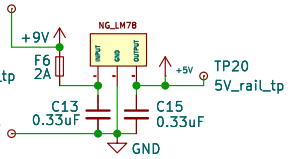
3.3V supply for LCD is powered by both 9V and 5V rails to allow for operation with or without direct 9V power

Battery

3.3V Power Supply



5V Power Supply



Subsystem Purpose:
- Provide menu-driven UI through LCD
- Allow user input through buttons
- Provide alerts via speaker
- Controller other sensor boards to perform tests as user requests
- Display sensor values through LCD

ASU EGR304 Team 210

Sheet: /
File: Individual Subsystem.kicad_sch

Title: Controller/User Interface Subsystem

Size: A4	Date: 2025-10-25	**Rev: 2**
KiCad E.D.A. 9.0.4		Id: 1/1