Design Review 2

1. **Supply considerations**
    a. I have switched the 12/24-5V regulator to a buck regulator to deal with the heat, which has a much larger output current of 1A (so it can now supply all the current needs for the whole board, which is estimated to have a max around 400 mA).
    b. I have opted to keep the other regulator that used to connect to 12/24 V. Instead I have it now connected to the output of the new buck regulator.
        i. Will this be alright for heat management? I assumed that the 5V - 3.3V wouldn't be too big of a drop to create too much heat.
        ii. This one is mainly in charge of the MCU supplies, which max 300 mA for 2 MCUs and it supplies 500 mA.
        iii. The rest of the current drawn (which relies on the 5 V directly) is estimated to be much less than 100 mA. But after op amp adjustments this will reduce further.
2. **Op Amp changes and gain**
    a. I removed the cascading amplifiers, and increased the shunt resistor to 200 ohms, which would give us signals around 100 mV.
        i. I am not married to 200 ohms at all, but I just cast a line in that general direction.
        ii. I will be looking further into it when I get the chance.
    b. So now the amplification will be 10 v/v at the drivers, to give us 1 V at the adc.
3. **RC Filtering**
    a. I will look into your advice and make changes accordingly as soon as I can

4. **Common mode voltage**
    a. I am slowly learning that data sheet reading is a skill I was clearly not born with. I think I have a bad habit of looking online before I look into the data sheet.
    b. I will connect the Vocm to a common mode that will be useful soon.
5. **MUX**
    a. Im burning the MUX and just going with a regular manual switch
6. **Crooked schematics**
    a. I believe my custom symbols were made with incompatible grids like you said. I will remake them with the proper grids and redo some lines soon.

Current Final Main Parts List

Supply
LDO Regulator 12-5V Removed
L78L05CD13TR

Buck Regulator 12-5V
LM2575-5.0WU

LDO REgulator 5-3.3V
TPS7B8633QDDARQ1

Reference Voltage IC 2.5V
REF5025AIDR

LDO Regulator 3.3-1.8V
MCP1725-1802E/SN

MCU
PIC32MZ2048EFG064-I/PT

ADC
MCP33131D-10T-I/MS

DAC
DAC8830ICD

Signal Conditioning and Amplification
ADC Differential Driver
MCP6D11T-E/MS

Input Conditioning Dual OpAmp Removed
TL3472IDR

DAC Output OpAmp
OPA704UA