

Changes from Coral Schematic:

- removed PMIC, added individual switching regs (TPS54) and LDOs (TPS7A)
- added MRAM on FlexSPI A CS1 to test booting from it.
- 24mhz crystal -> TCXO
- changed NAND flash to be 2GB instead of 1GB (since that is what is available on JLCPCB)
- changed USB-C component to use same P/N as PyCubed
- changed some of the GPIO banks from 1.8V to 3.3V
- added a few connectors for RBF + interface with a PyCubed
- removed USB-C controller (since we do not need OTG functionality)
- changed most unused pin names to generic RT1176 names
- left: SD Card, Camera, TPU, ethernet (in order of likelihood that we add these things)

Power



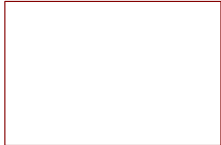
File: power.kicad_sch

Boot Config



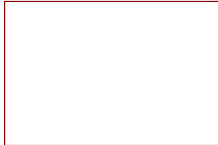
File: boot_config.kicad_sch

RT1176 #1



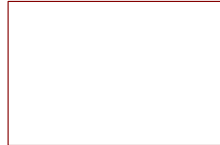
File: rt1176_1.kicad_sch

RT1176 #2



File: rt1176_2.kicad_sch

RT1176 #3



File: rt1176_3.kicad_sch

MRAM



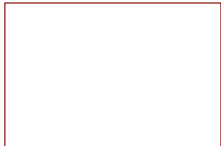
File: mram.kicad_sch

SDRAM



File: sdram.kicad_sch

Interface



File: interface.kicad_sch

USB-C



File: usbc.kicad_sch

Board to Board



File: board_to_board.kicad_sch

TODOs

- [] Do I need a PMIC?
- [] Add DNPs
- [] Spec passives
- [] decide on 0402 vs. 0603 for caps/resistors
- [] check global label directions
- [] beautify schematic
- [] make the RT1176 boxes wider
- [] (not important) 3D part models
- [x] Switch fixed regs to variable
- [x] Make sure most components are on JLCPCB
- [x] Double check GPIOs and GPIO voltages
- [x] Fix the \$source_resistor
- [x] Double check D1/D2
- [x] add boot config switches
- [x] add boot circuitry
- [x] double check xSPI MRAM
- [x] clean up label sizing

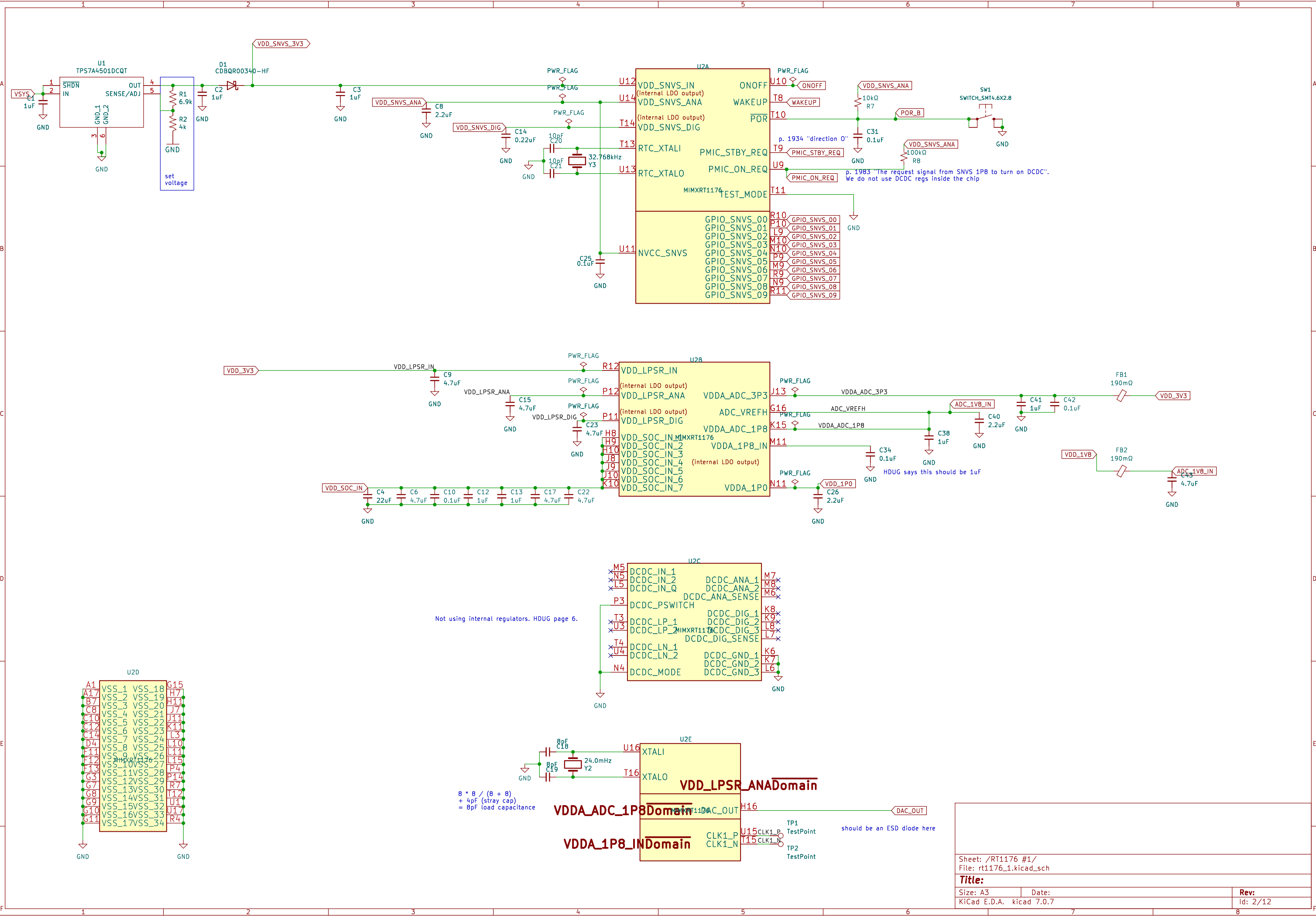
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File: cpu_board.kicad_sch

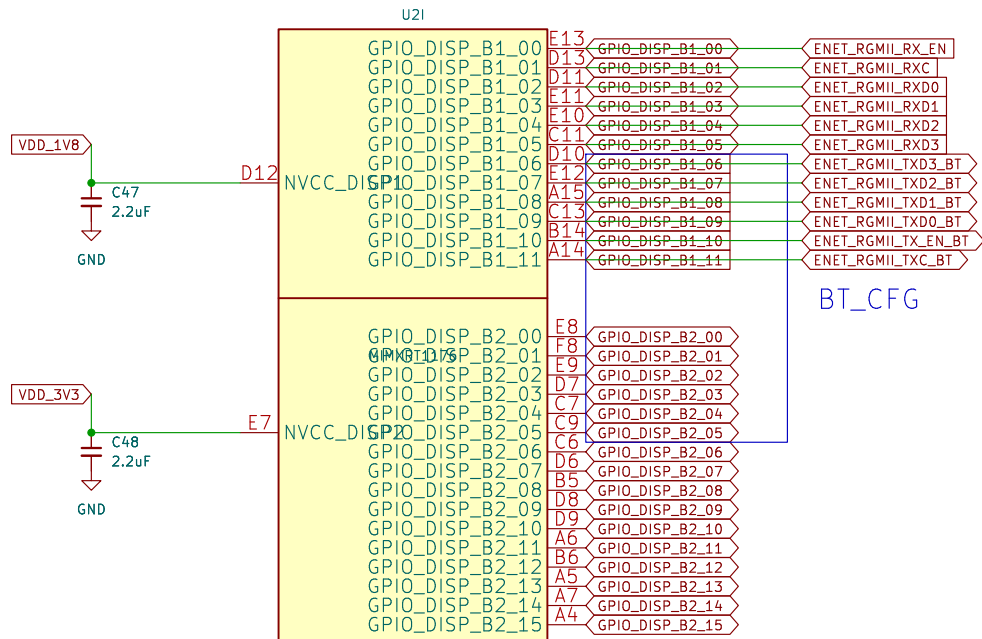
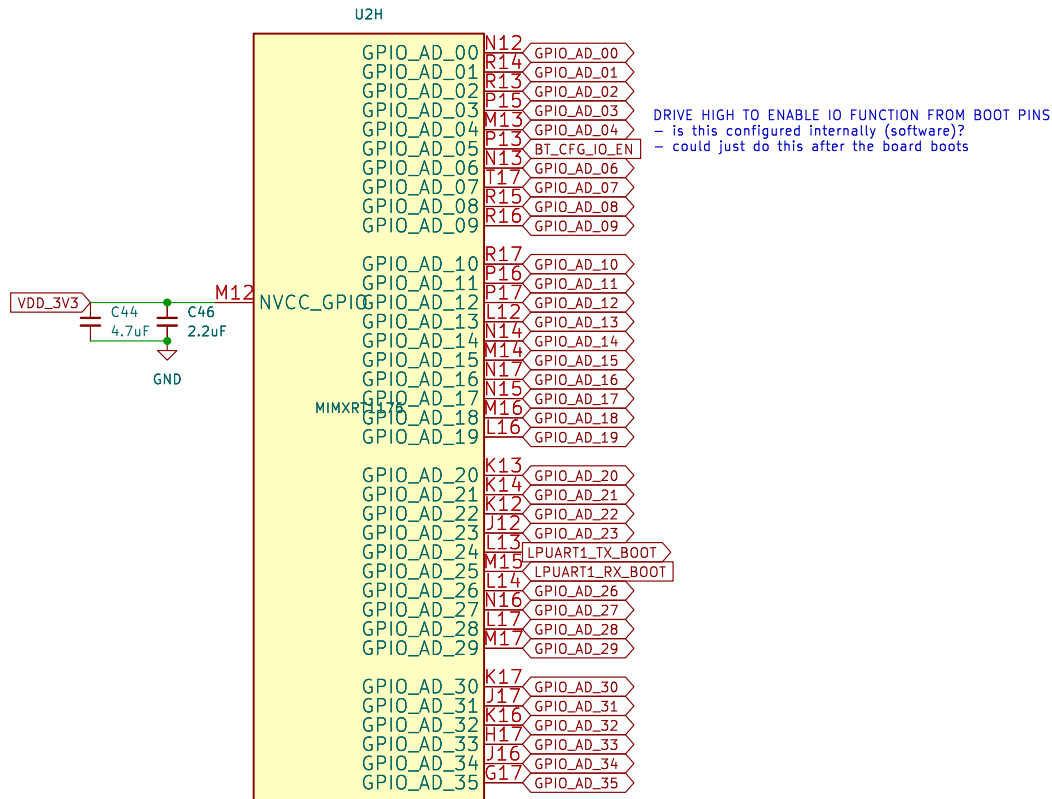
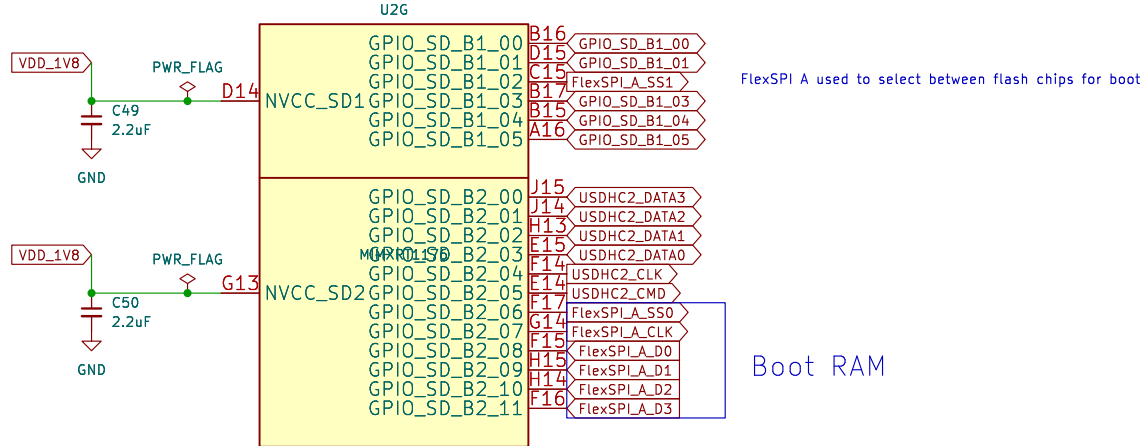
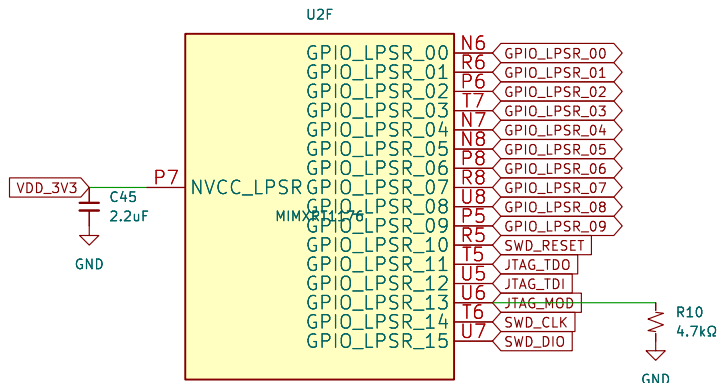
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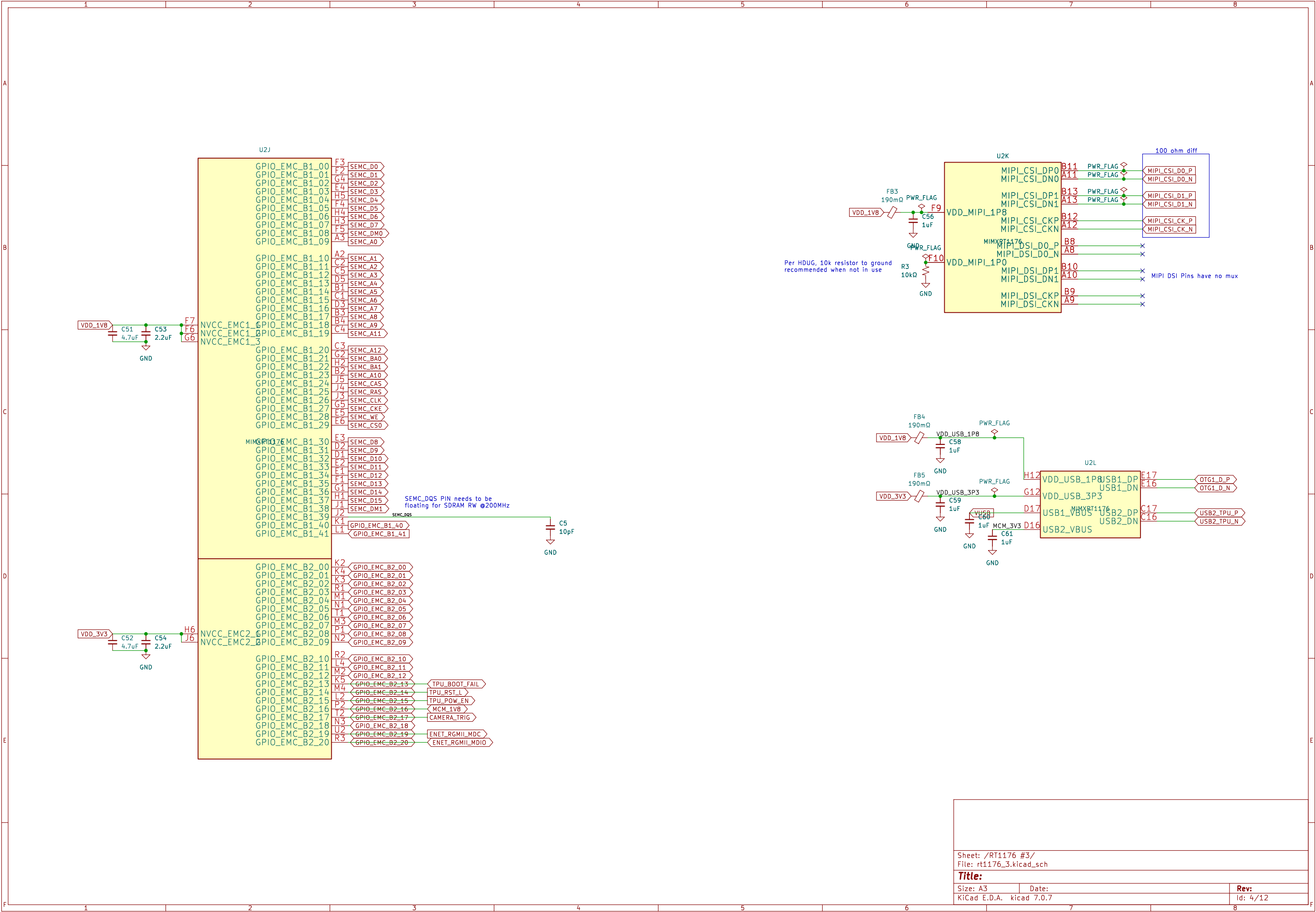
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KiCad E.D.A. kicad 7.0.7

Date:

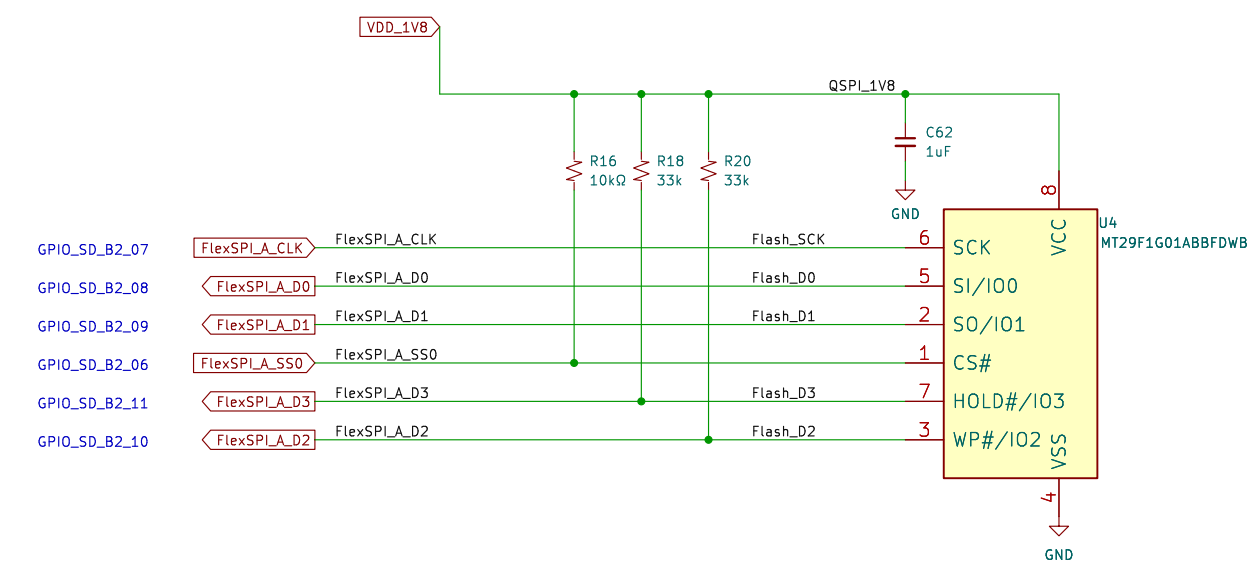
Rev:
Id: 1/12



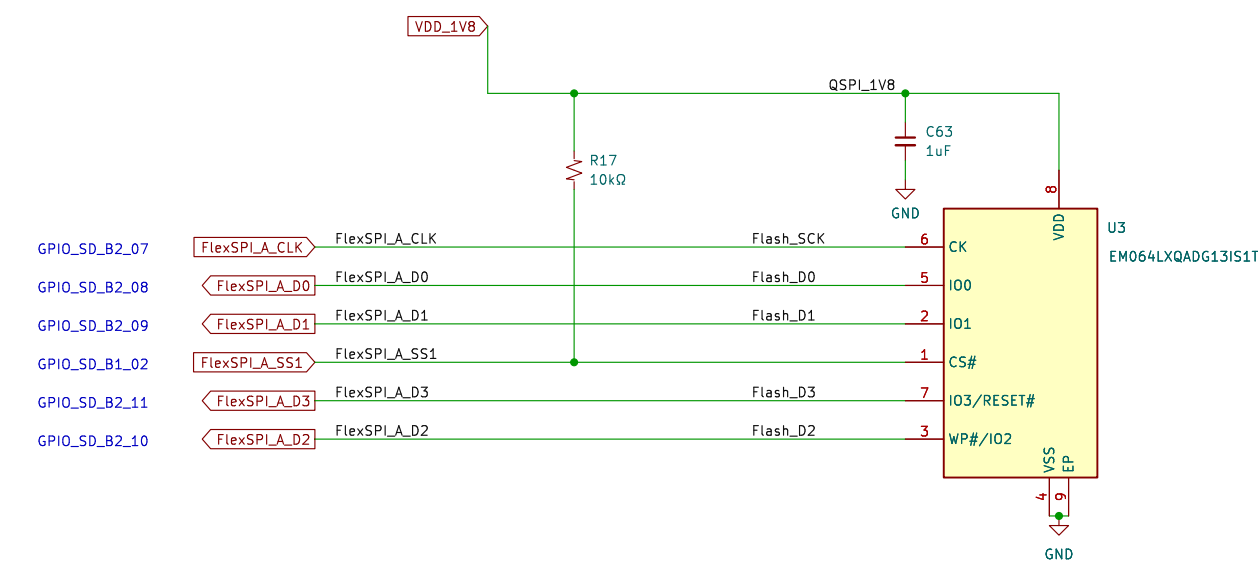




1V8 QSPI Flash – Copied from Coral

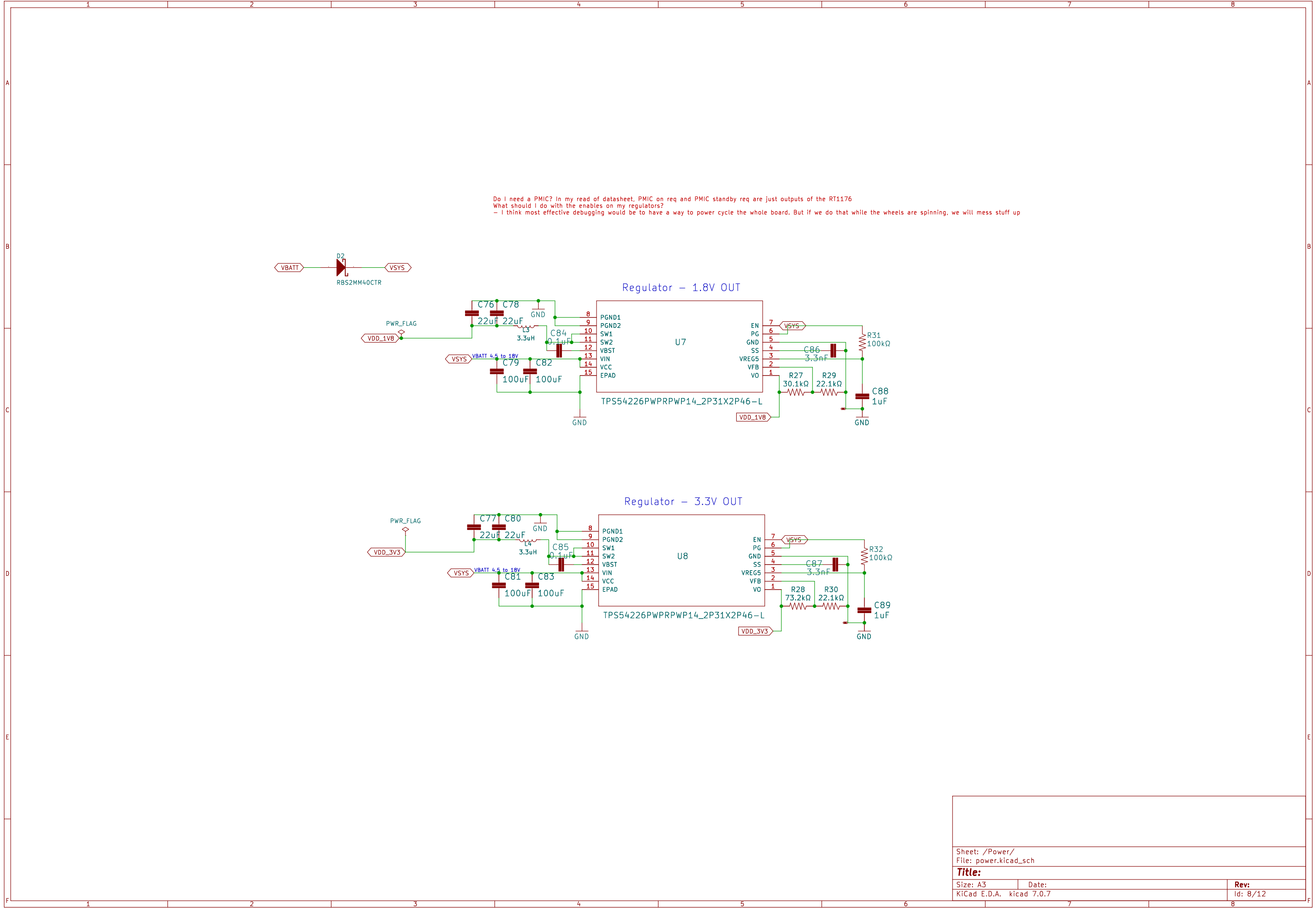


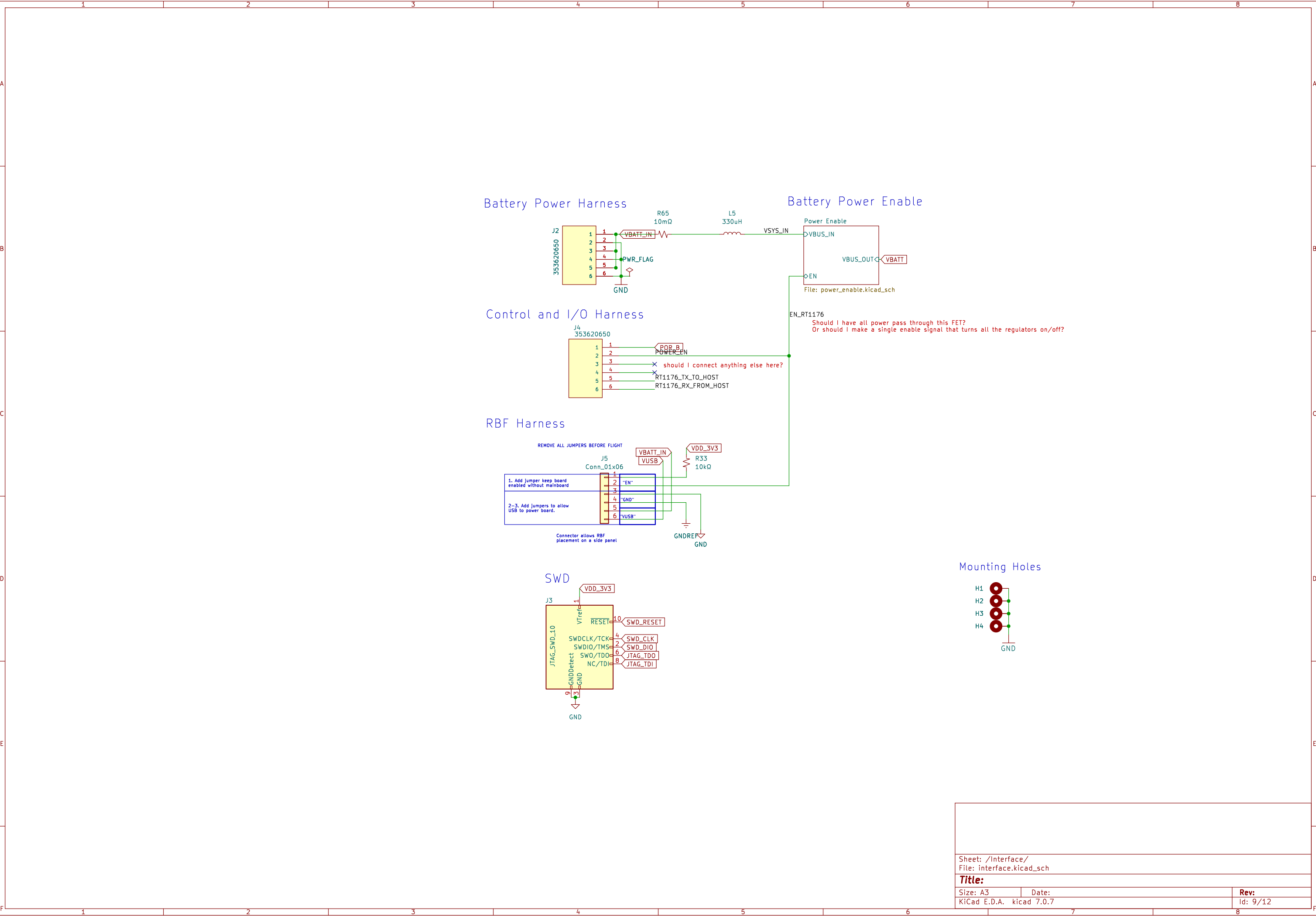
1V8 QSPI MRAM – Not the same as PyCubed!
Uses different MRAM technology that is smaller,
and a slightly different SPI interface

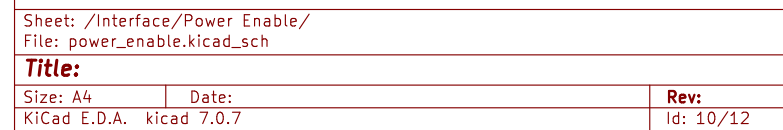




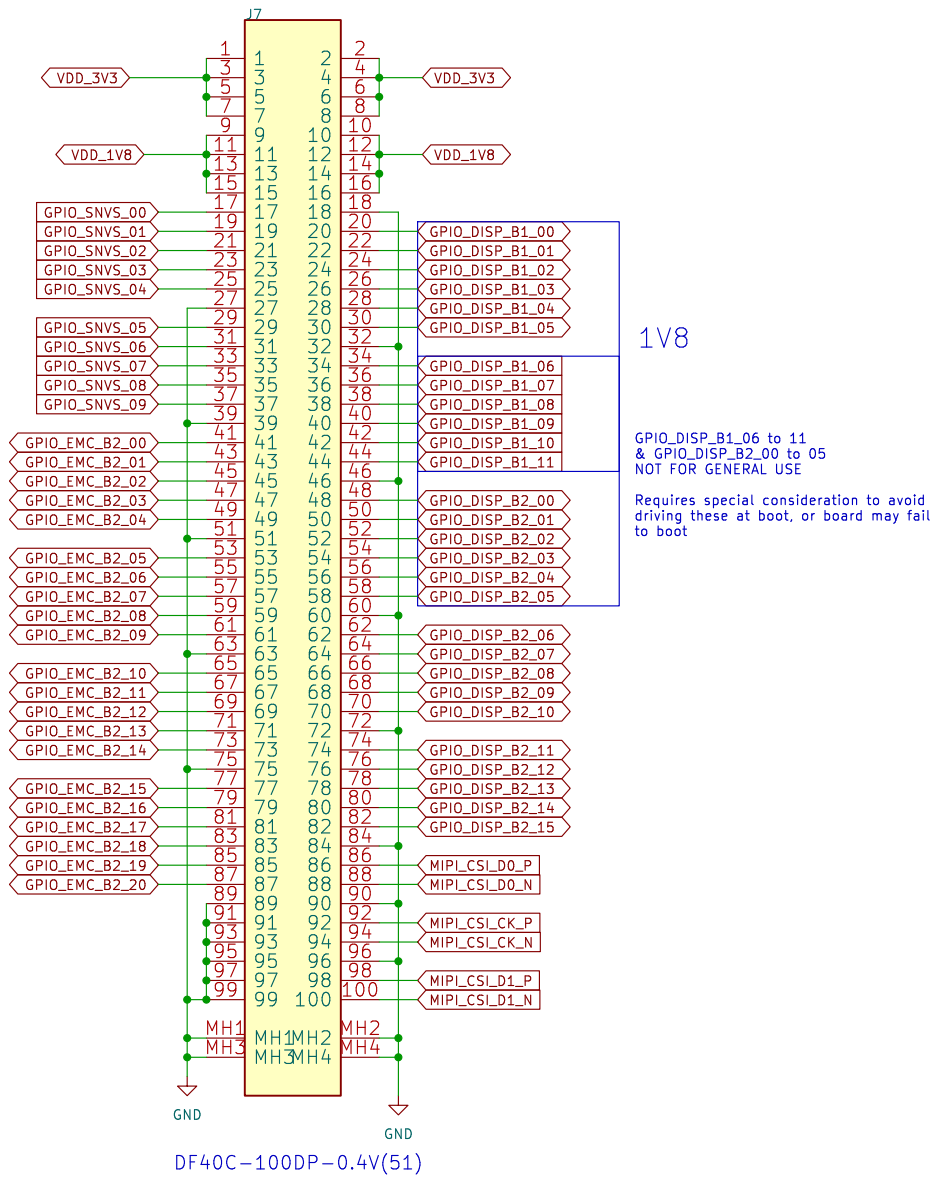
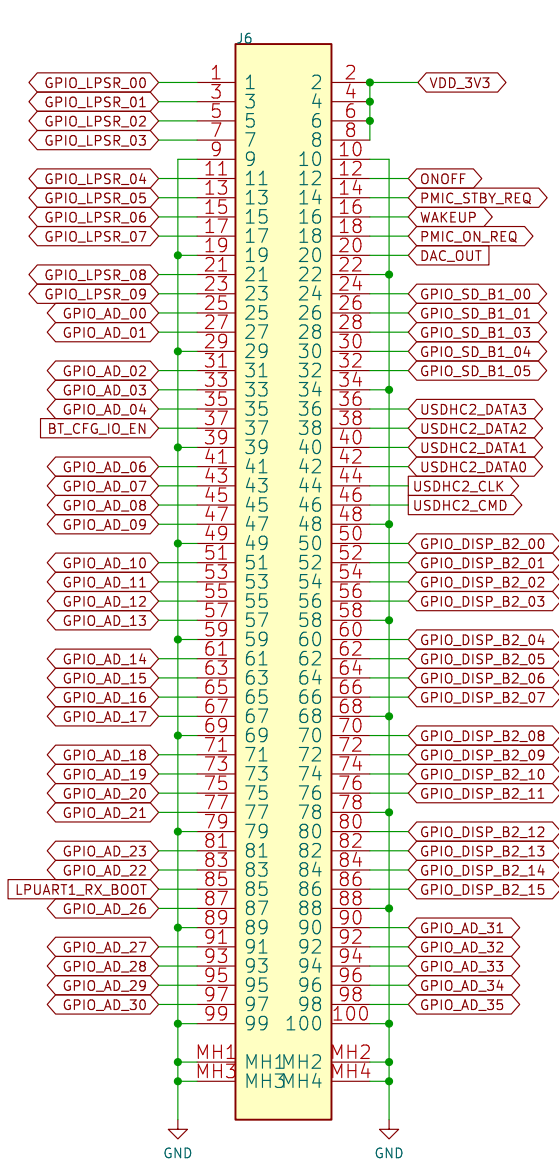








This is still a little bit messy and I need to double check all the labels
I do not think DRC catches global labels that are only present in one spot
(since I left some of the "ethernet" labels, etc. and there are no errors for those)

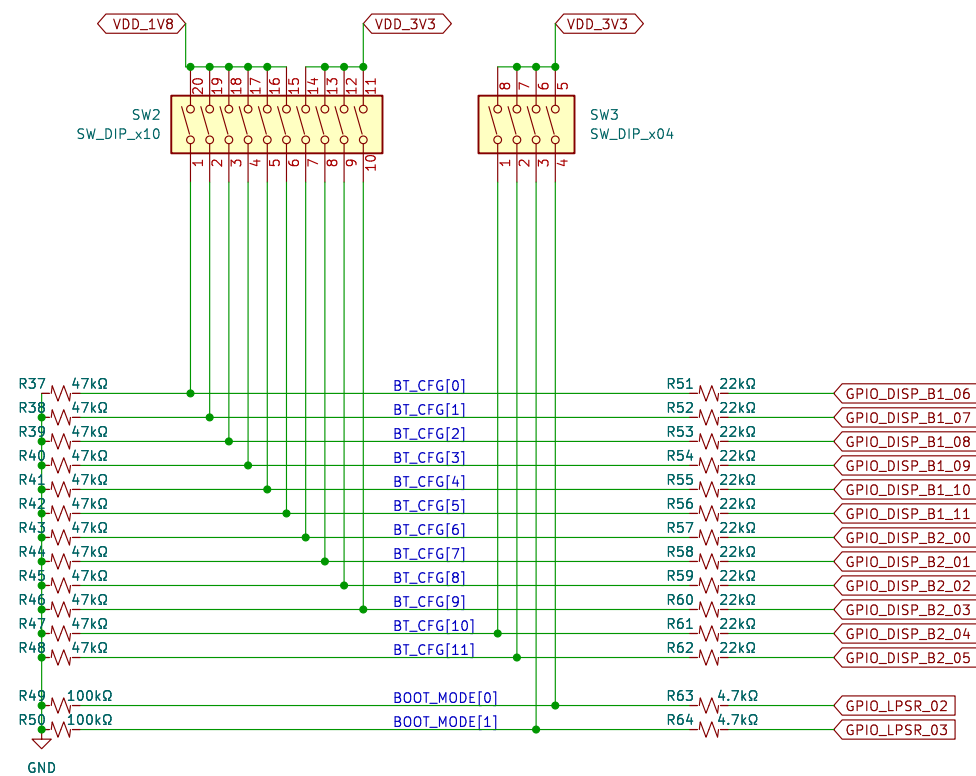


1V8

GPIO_DISP_B1_06 to 11
& GPIO_DISP_B2_00 to 05
NOT FOR GENERAL USE

Requires special consideration to avoid
driving these at boot, or board may fail
to boot

DF40C-100DP-0.4V(51)



Boot MODE pin settings

BOOT_MODE[1:0]		Boot Type
00		Boot From Fuses
01		Serial Downloader
10		Internal Boot
11		Reserved