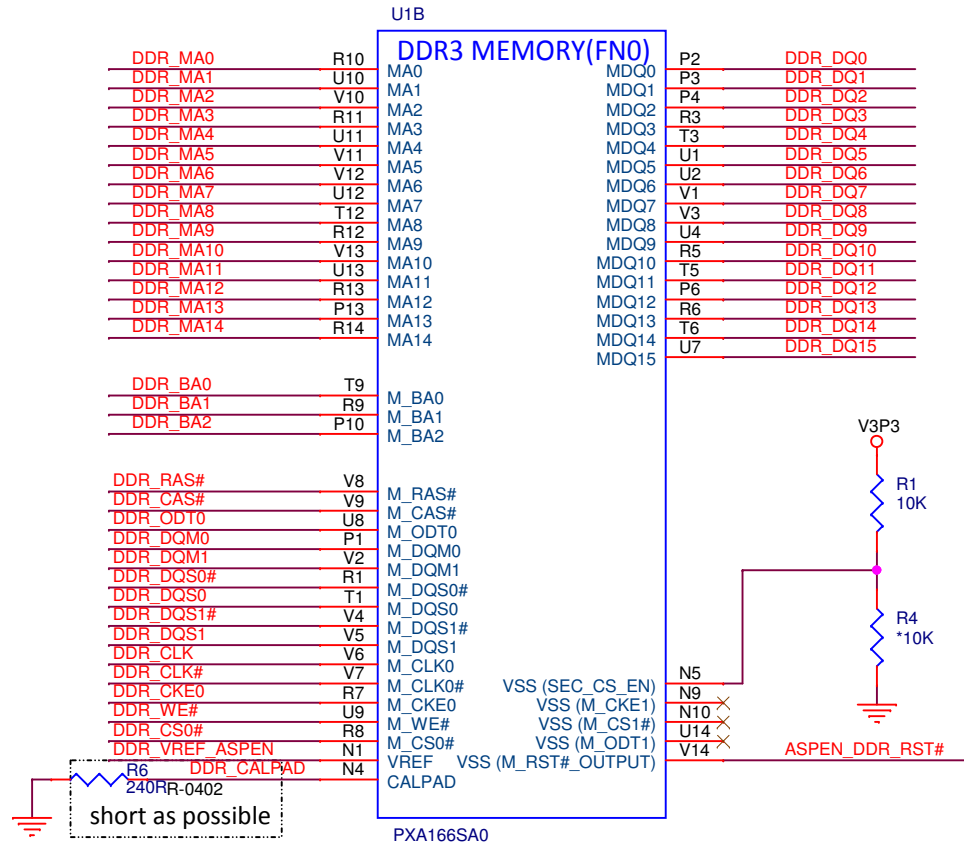
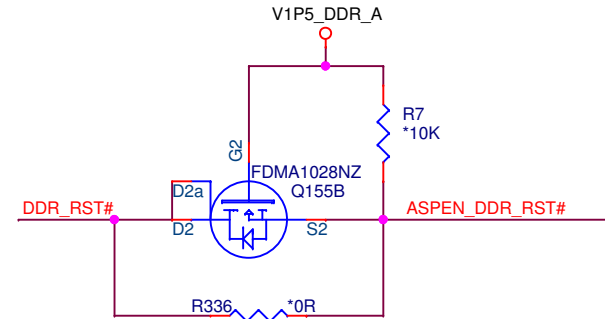
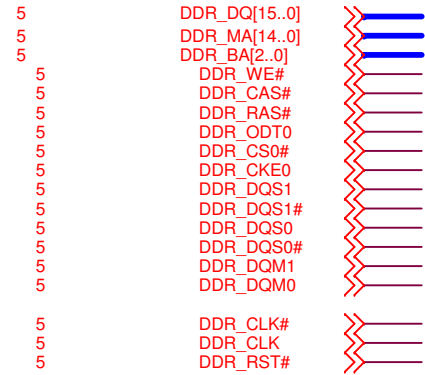


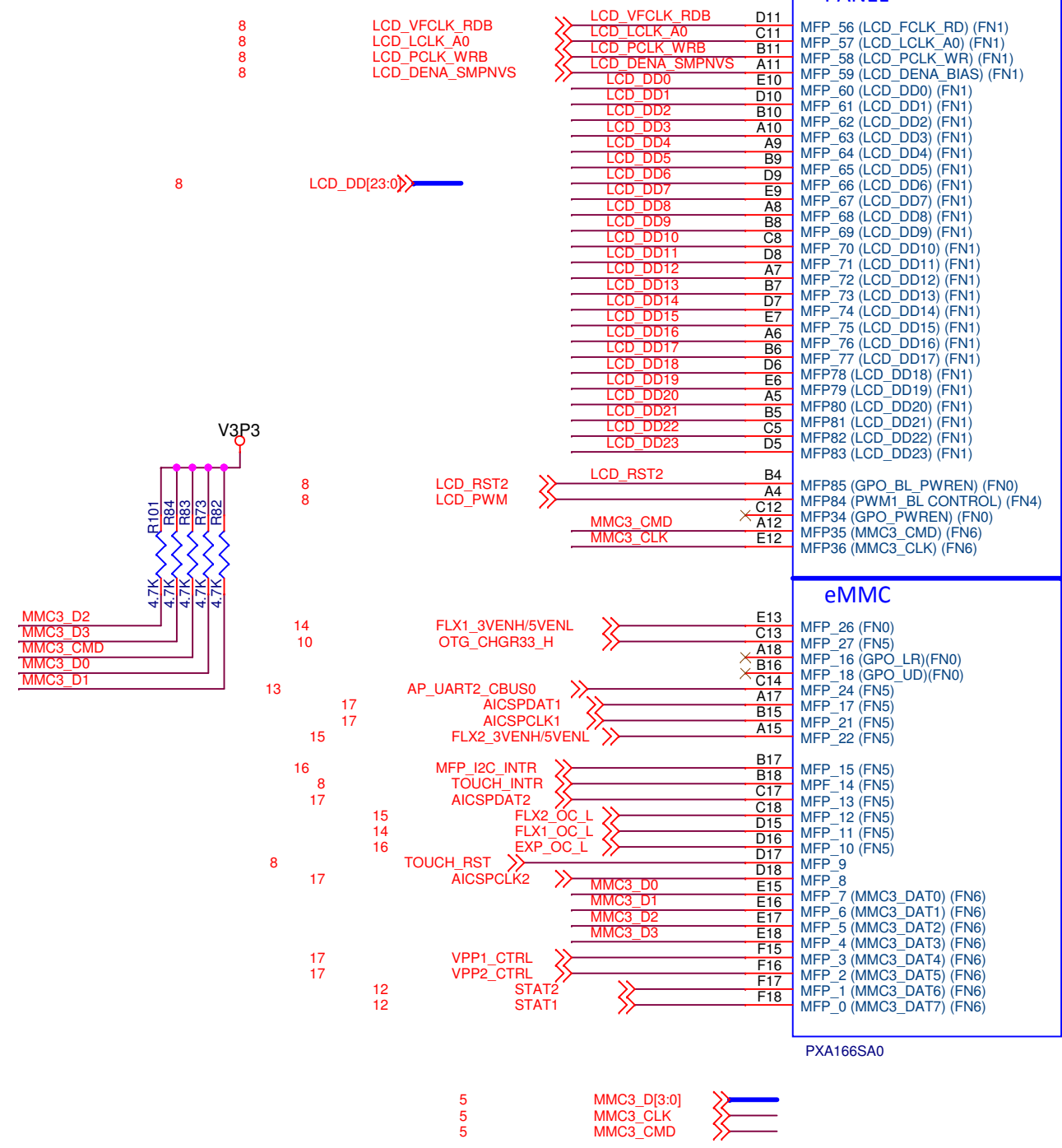
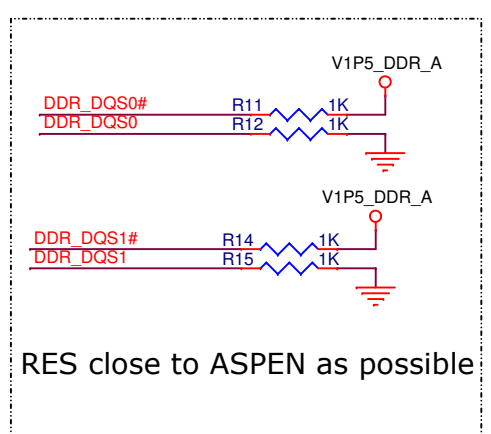
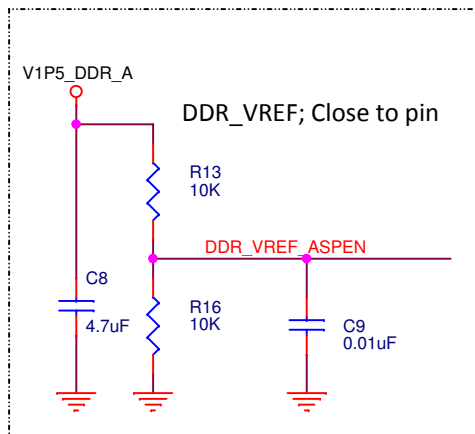
This Design is given "AS IS" without warranty of any kind, either expressed or implied.

ASPEN - MEMORY/LCD

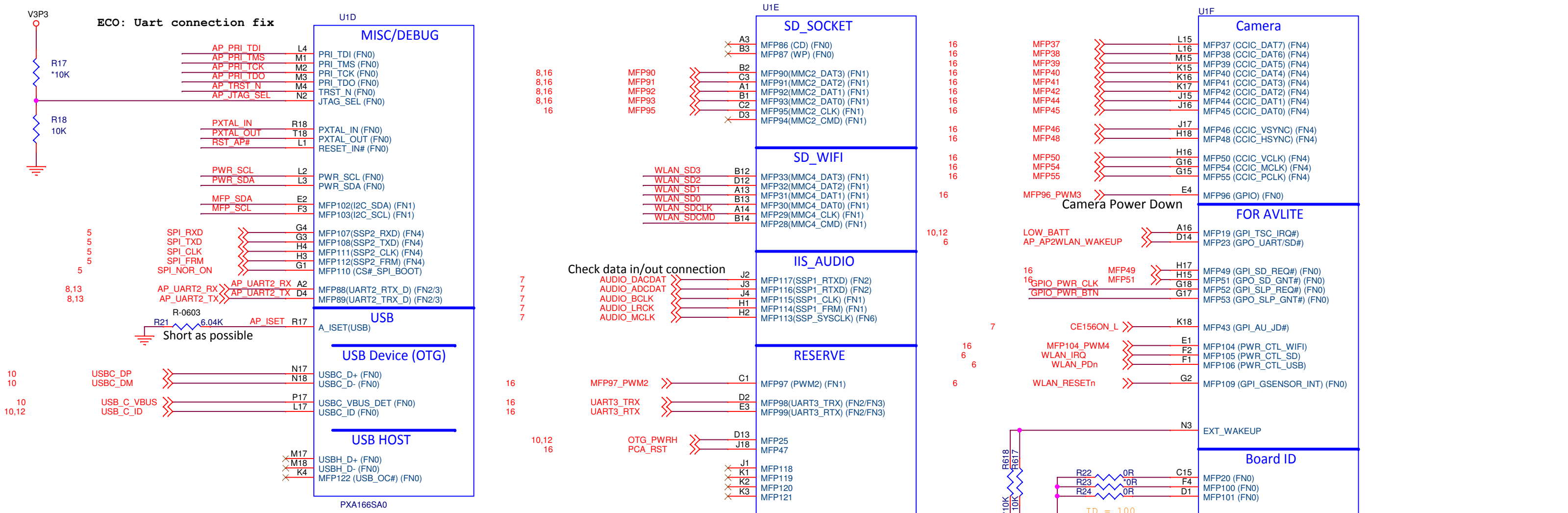
DDR3 MEM



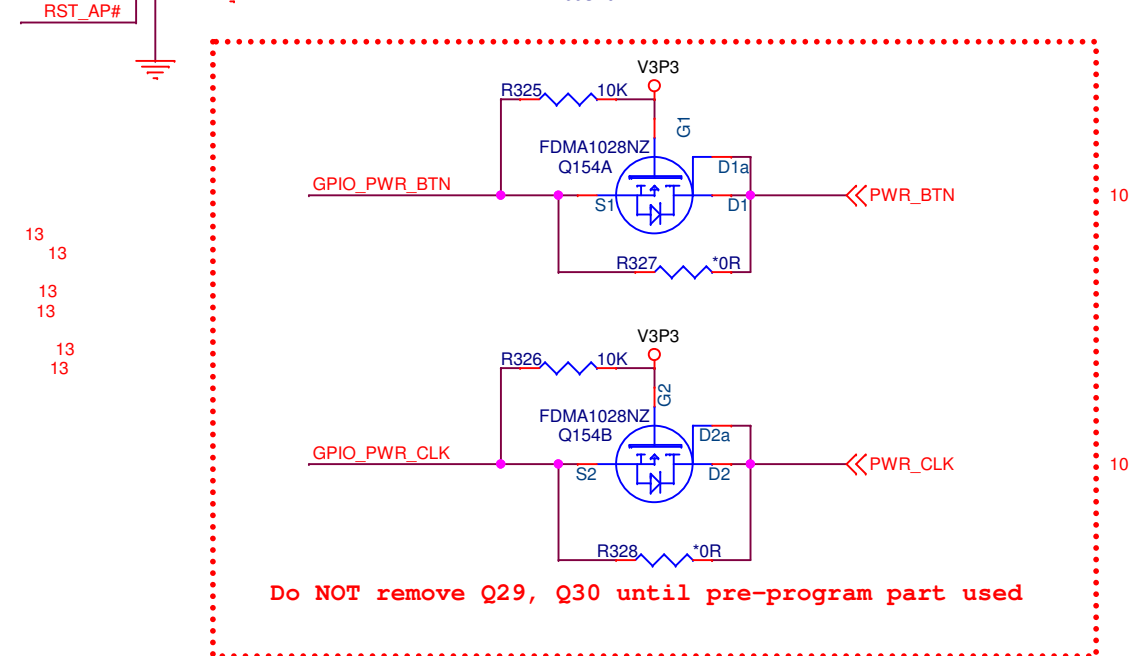
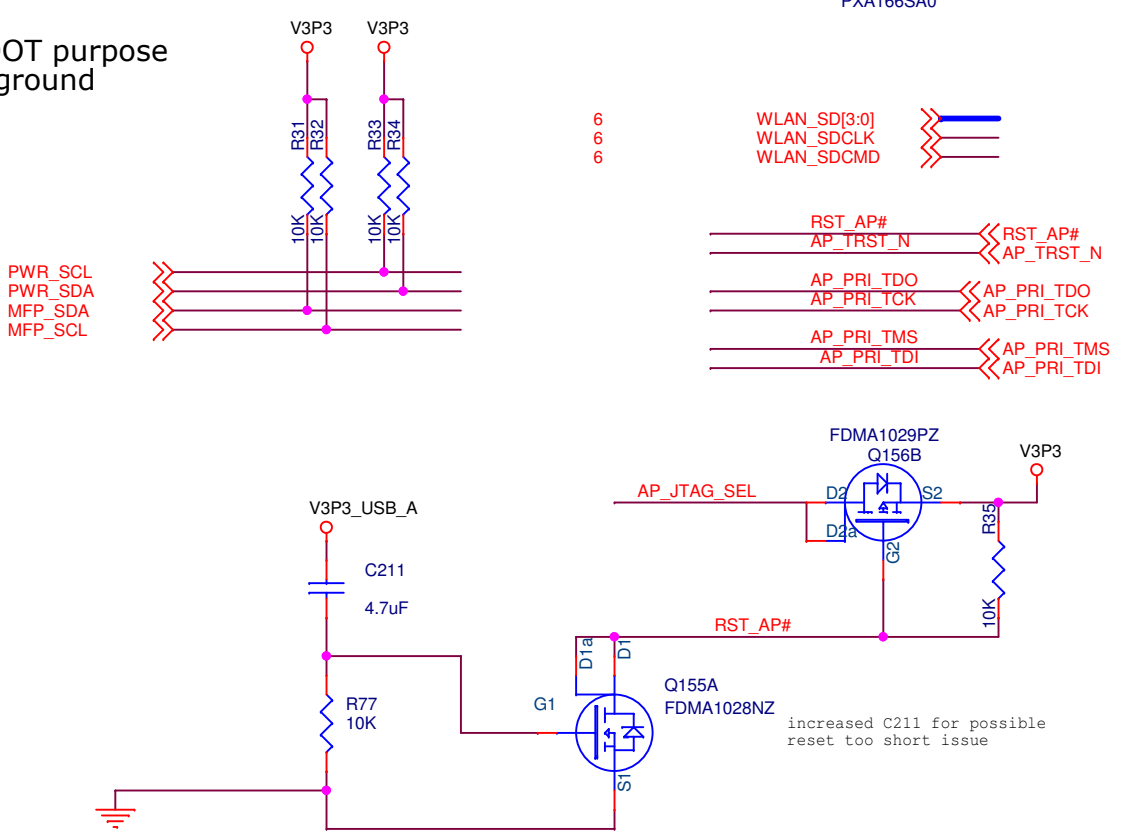
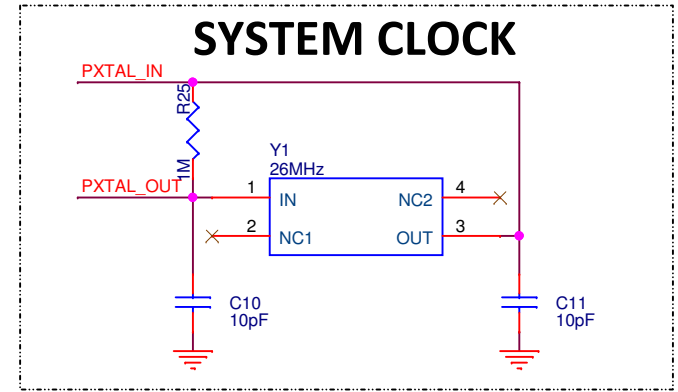
Notes:
Connect 240ohm 1% resistor to ground for CALPAD pin.



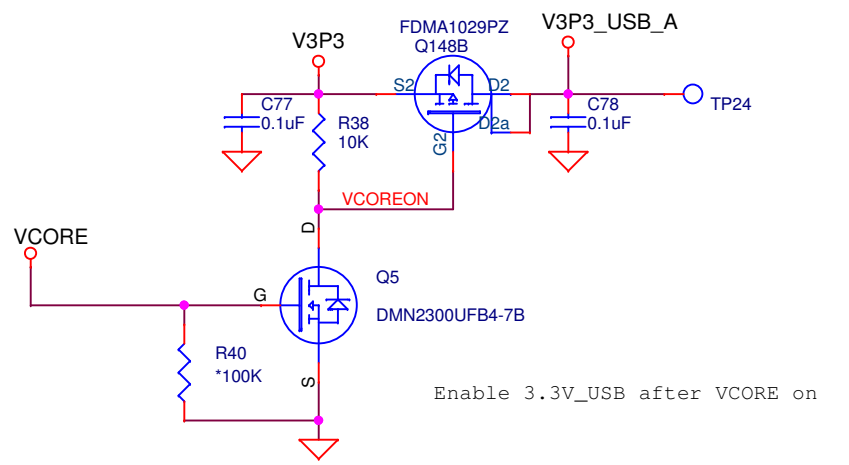
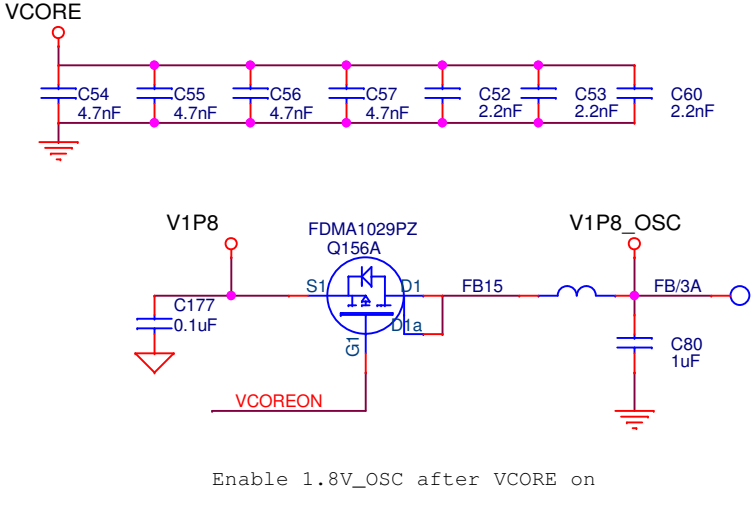
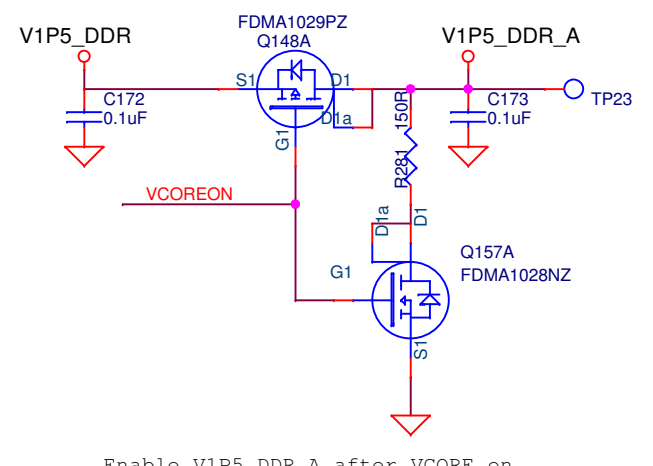
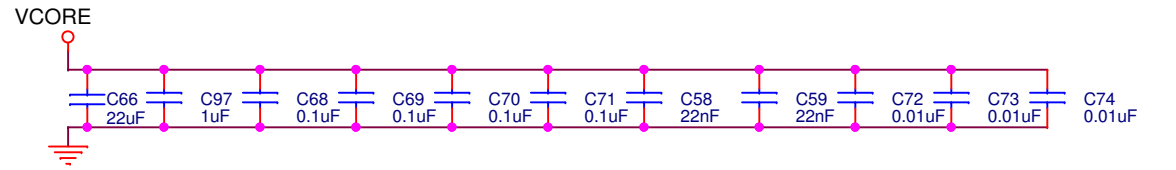
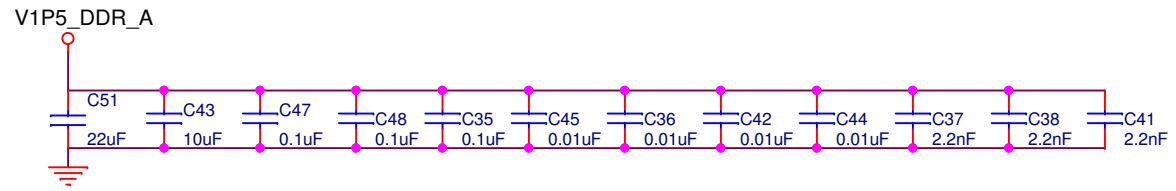
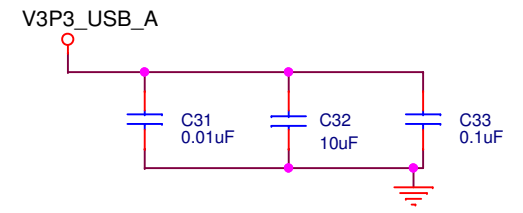
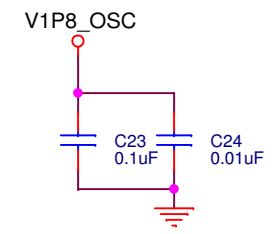
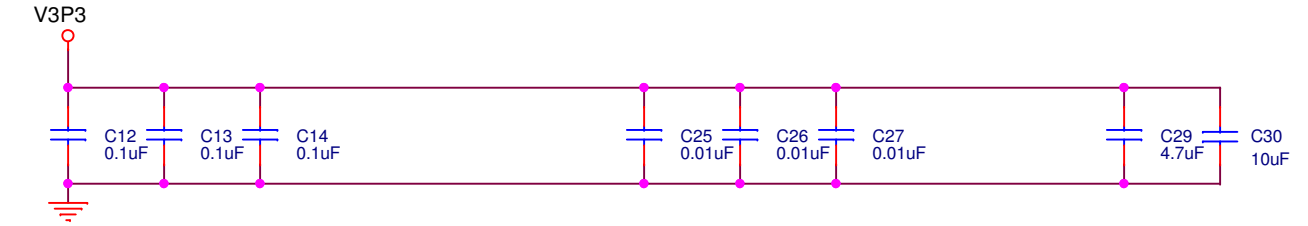
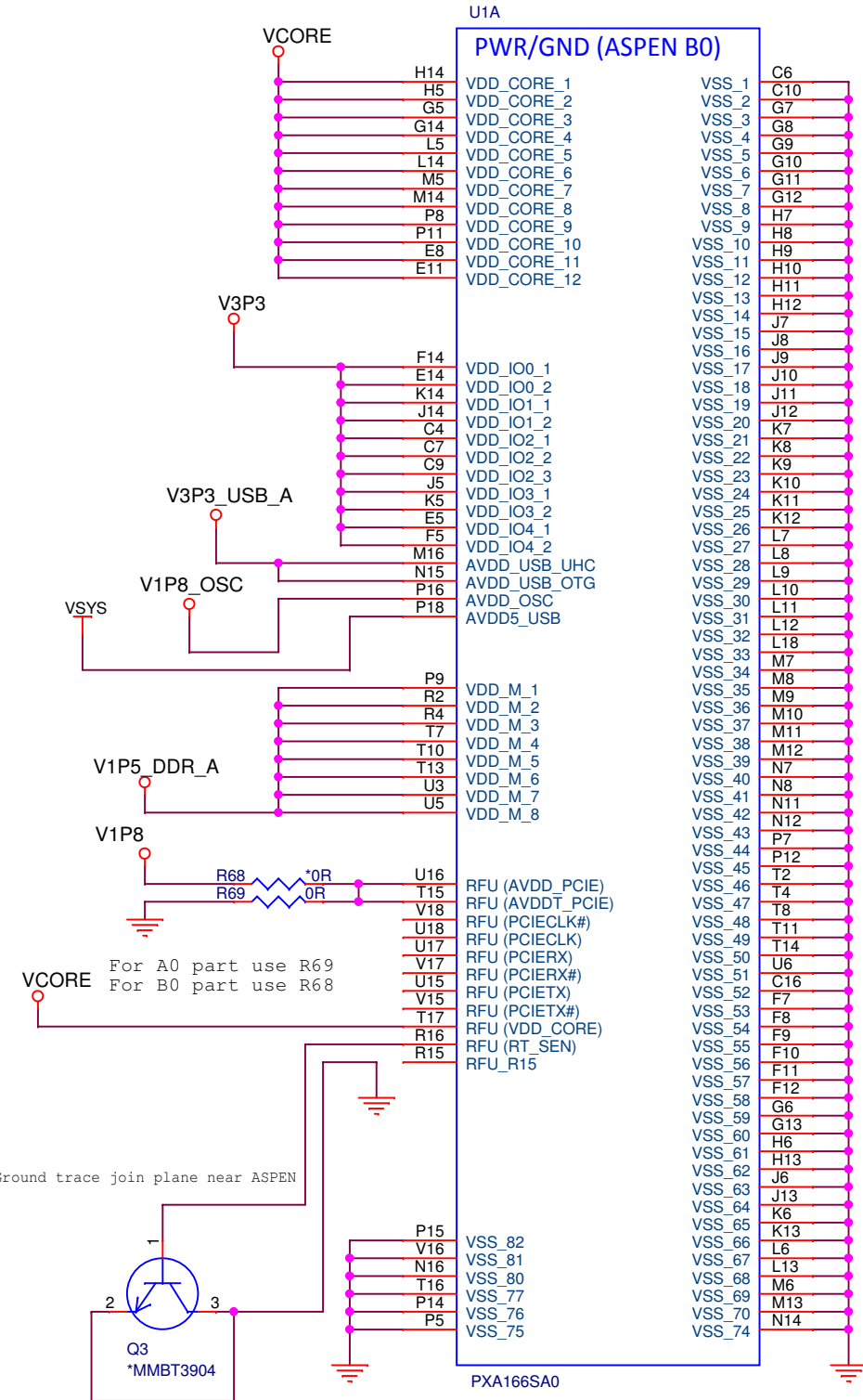
ASPEN-DEBUG/SDIO/SSP/UART/MISC



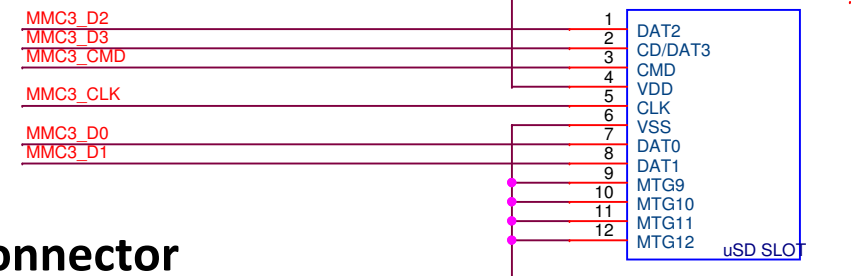
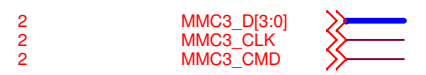
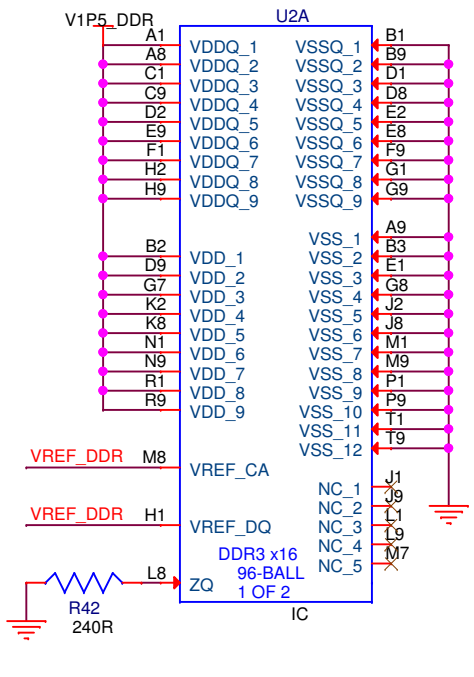
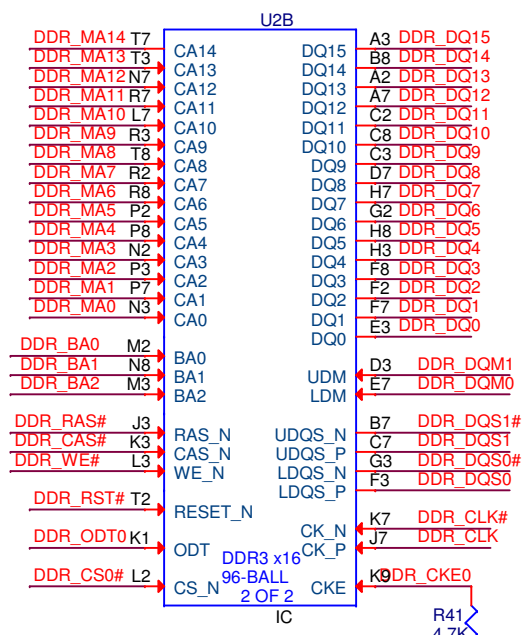
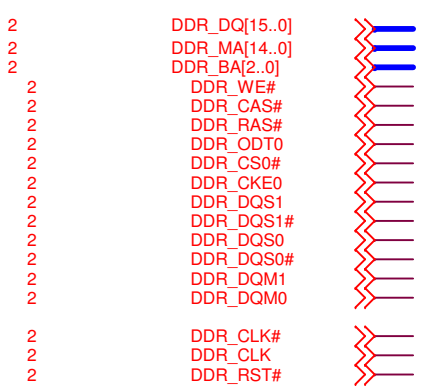
Notes:
 1. MFP110 is dedicated for SPI NOR FLASH BOOT purpose
 2. A_ISET: connect 6.04Kohm 1% resistor to ground



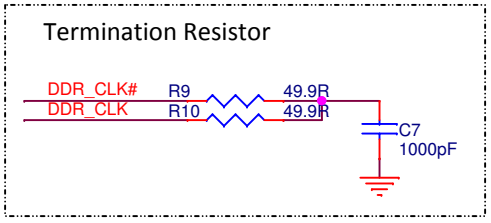
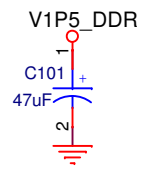
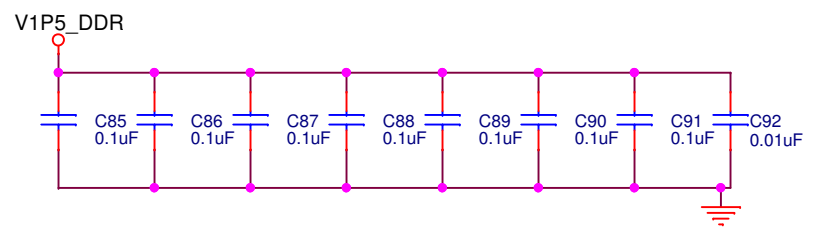
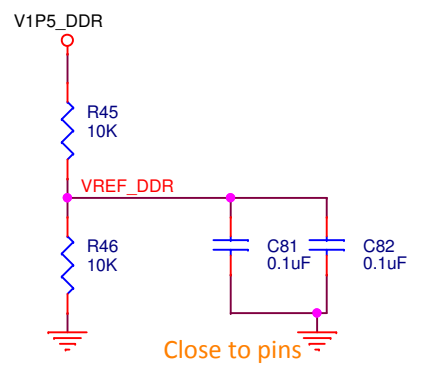
ASPEN - Power



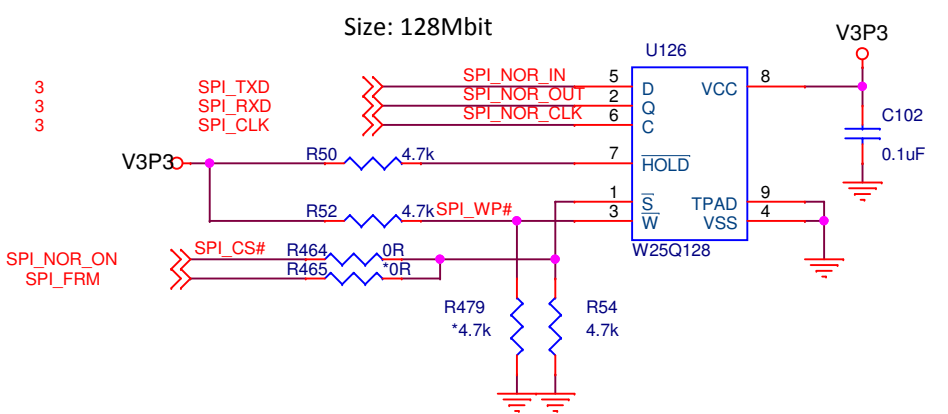
Footprint 4Gb 512Mbytes MAX Part Used 1Gb 128MBytes



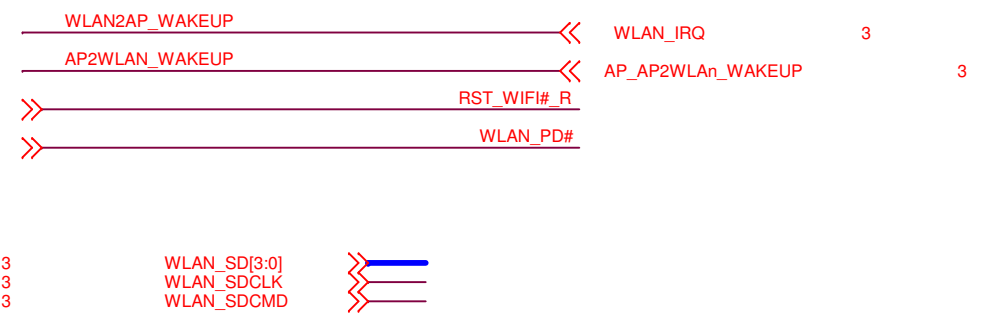
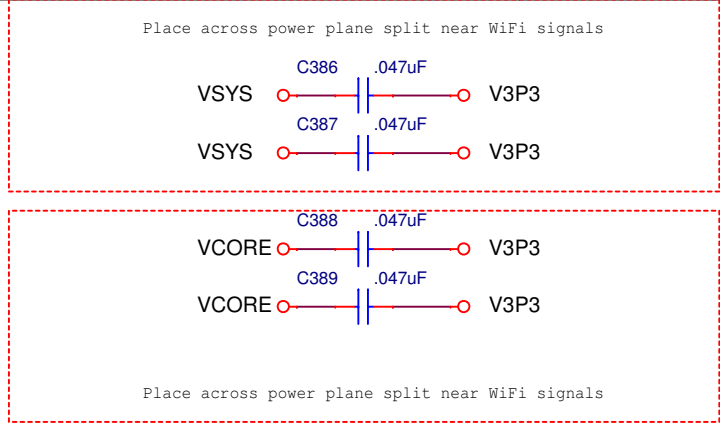
SD/MMC connector FOR DEVELOPMENT USE



SPI NOR FLASH



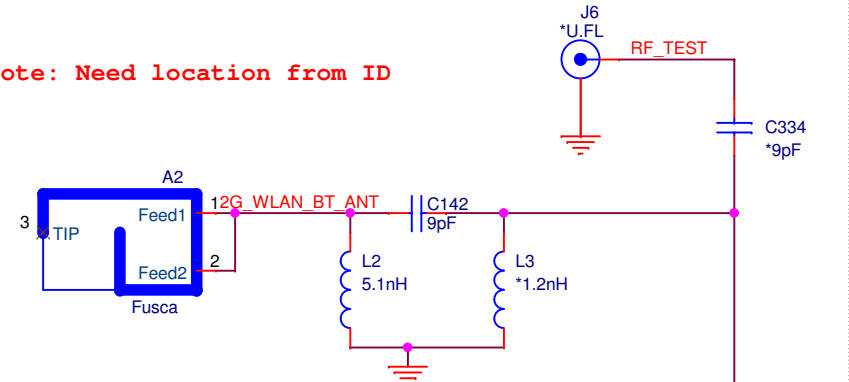
Marvell Technology Ltd		
DDR3 SDRAM		
Title	Document Number	Rev
Size	Kinoma Create	3.0
Date:	Friday, July 25, 2014	Sheet 5 of 18



Must be outside shield

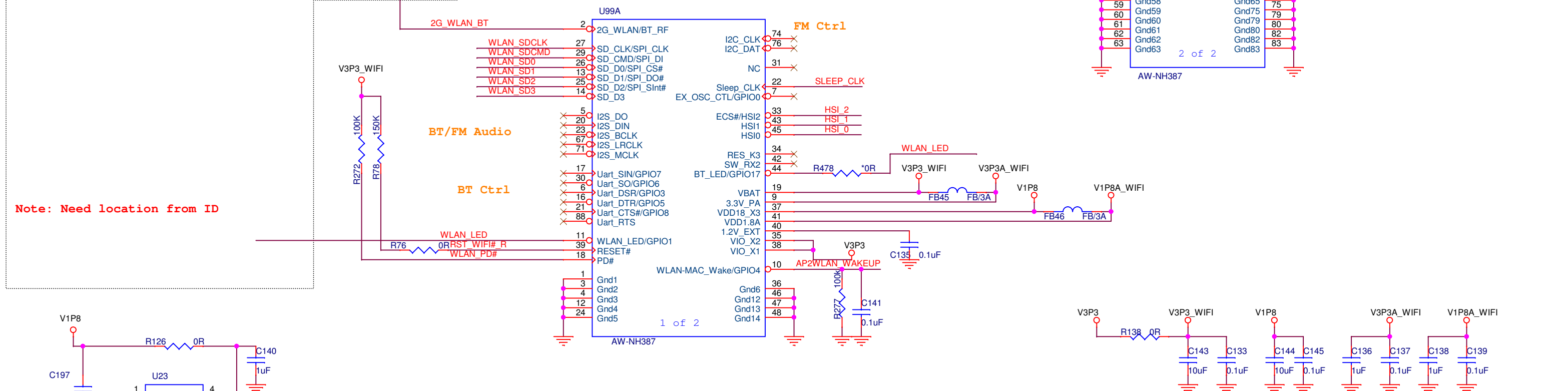
New Antenna

Note: Need location from ID

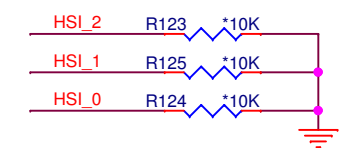
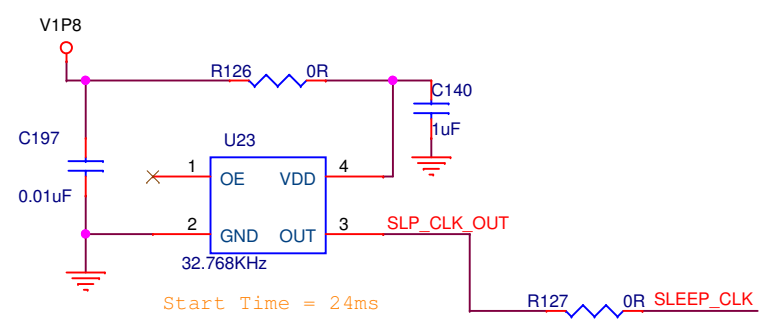


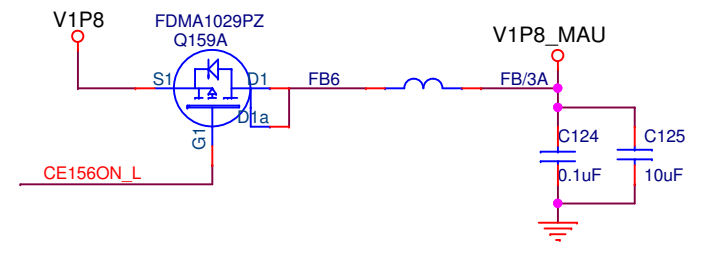
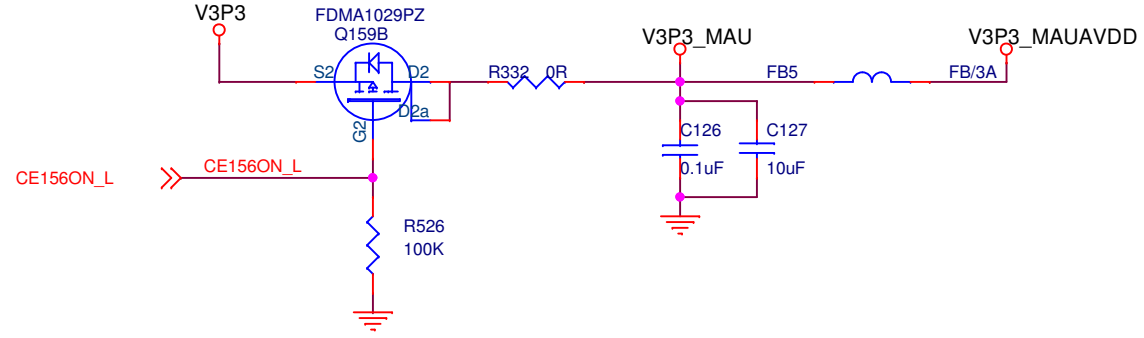
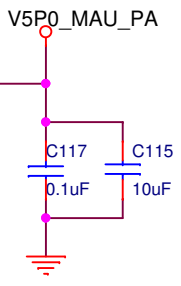
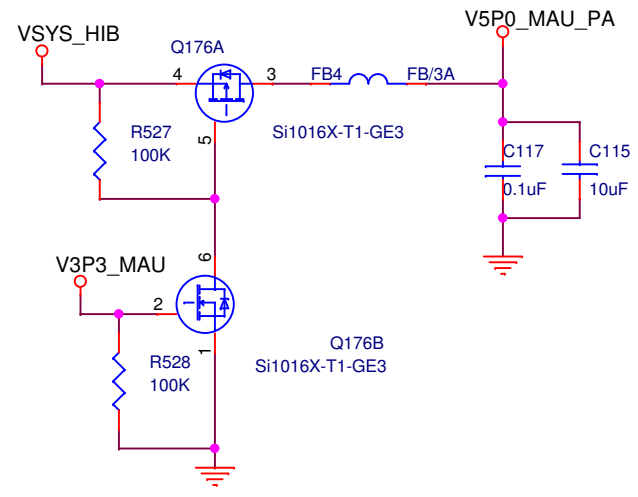
AW-NH387L 8787 WIFI

Note: Need location from ID

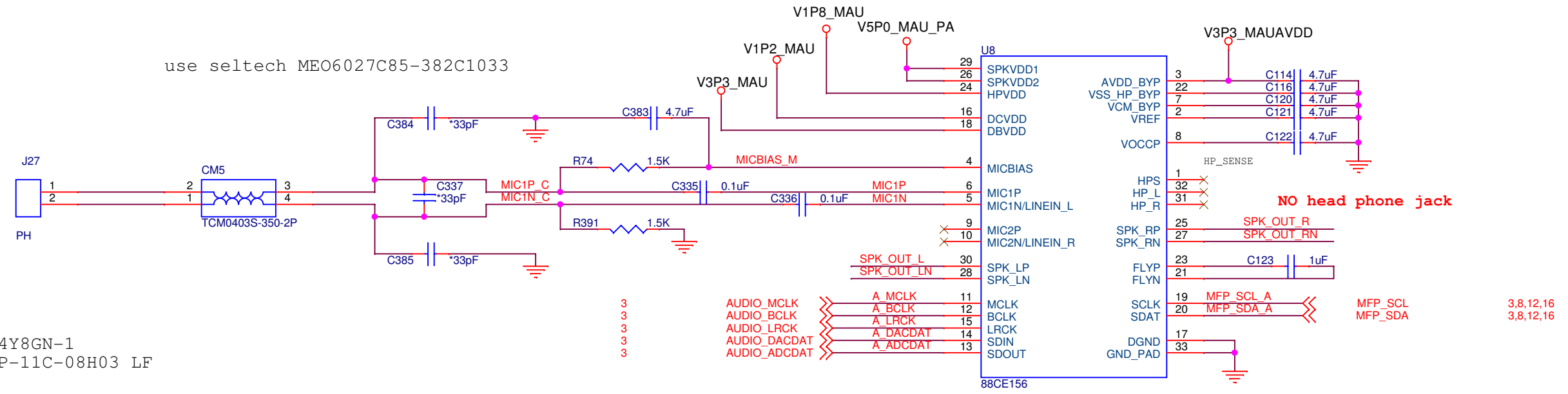


8787 Power-On Sequence:
3.3V/1.8V/SleepCLK -> RESET# High

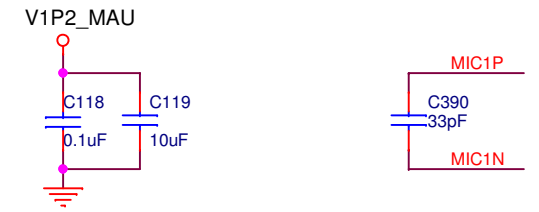
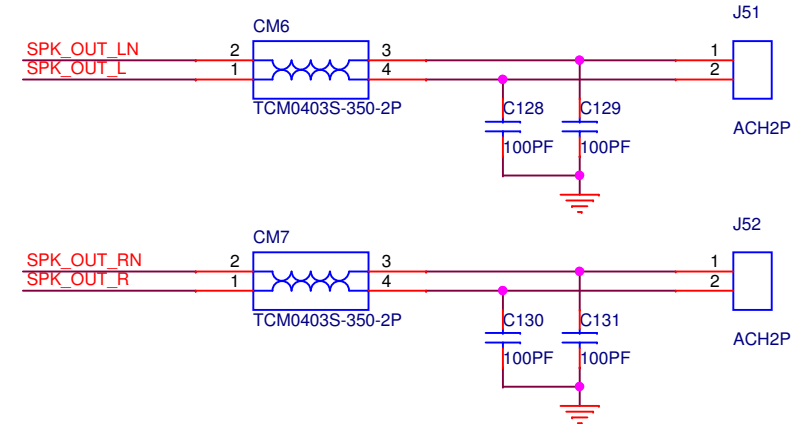




use seltech ME06027C85-382C1033

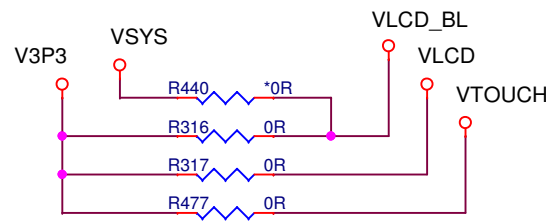


use only ONE
seltech GO2014C4Y8GN-1
bestar BMS2014P-11C-08H03 LF

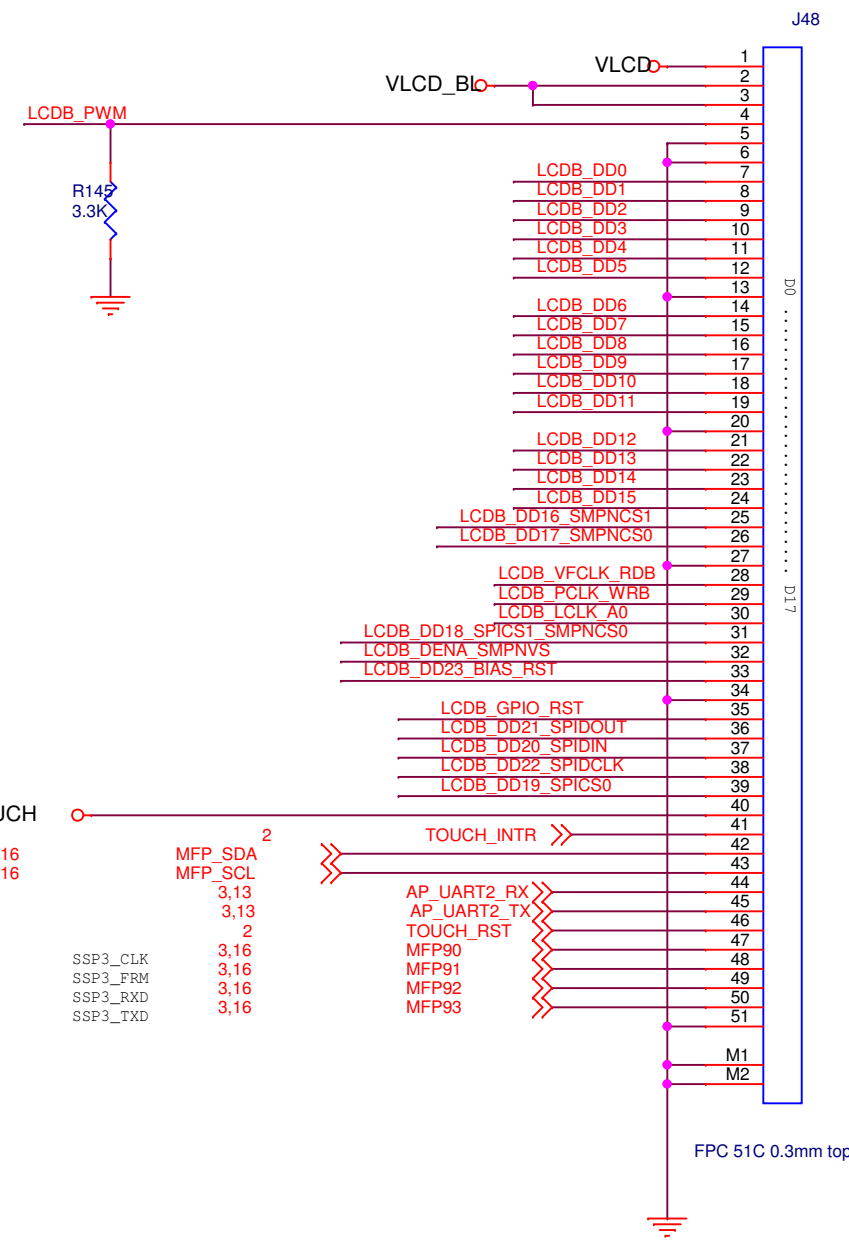
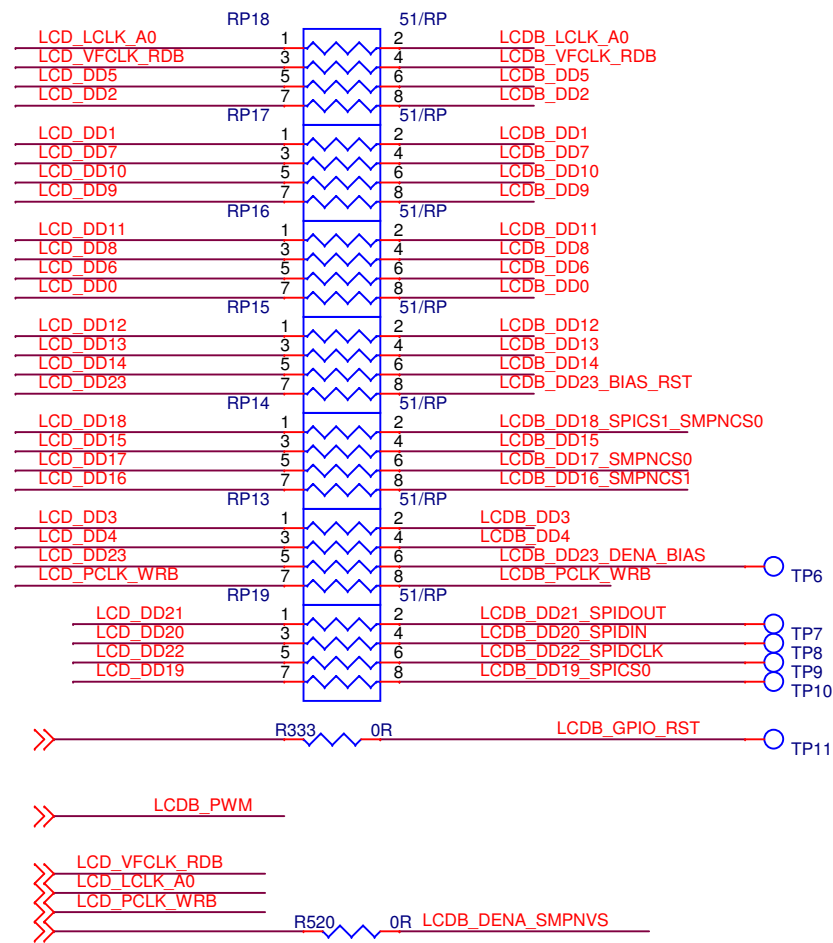


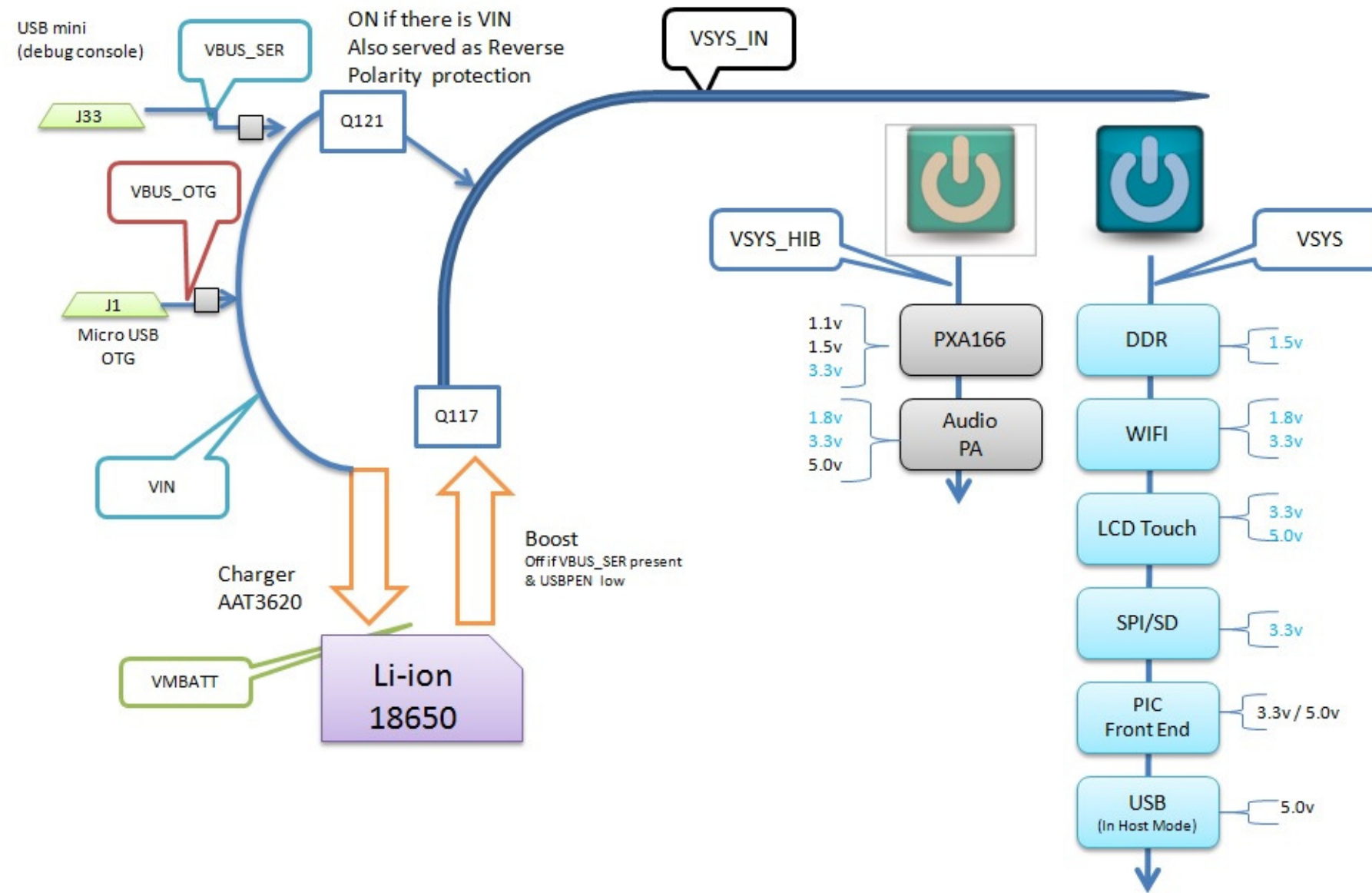
I2C linux address: 0x30

All aspen LCD + Touch signals to bridge



PIN SWAP OK

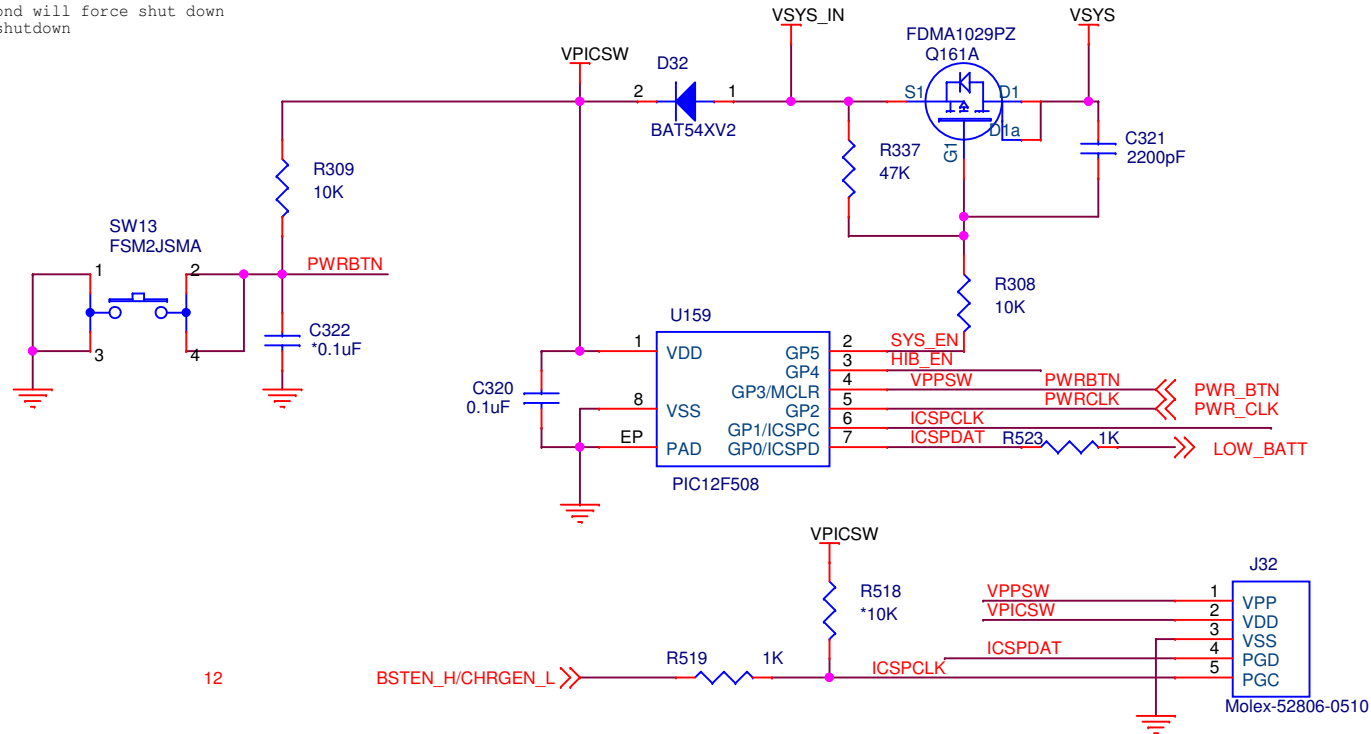




Power Button

While off - pressing will turn unit on
while on - momentary press will let software shutdown
while on - holding it for 4 second will force shut down
when bat low during hibernate, shutdown

ECO 1: U159 P3-4 swap
ICSPCLK isolation
programmer error fix D32



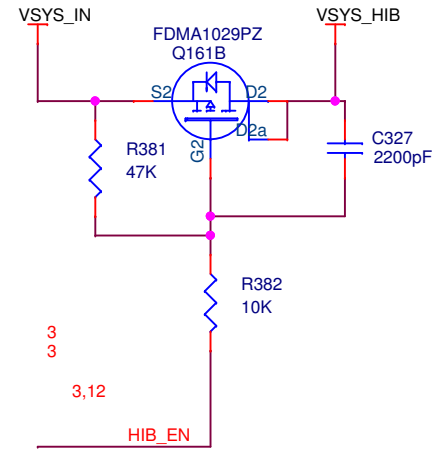
12

USE FFC 21039-0732 @mouser

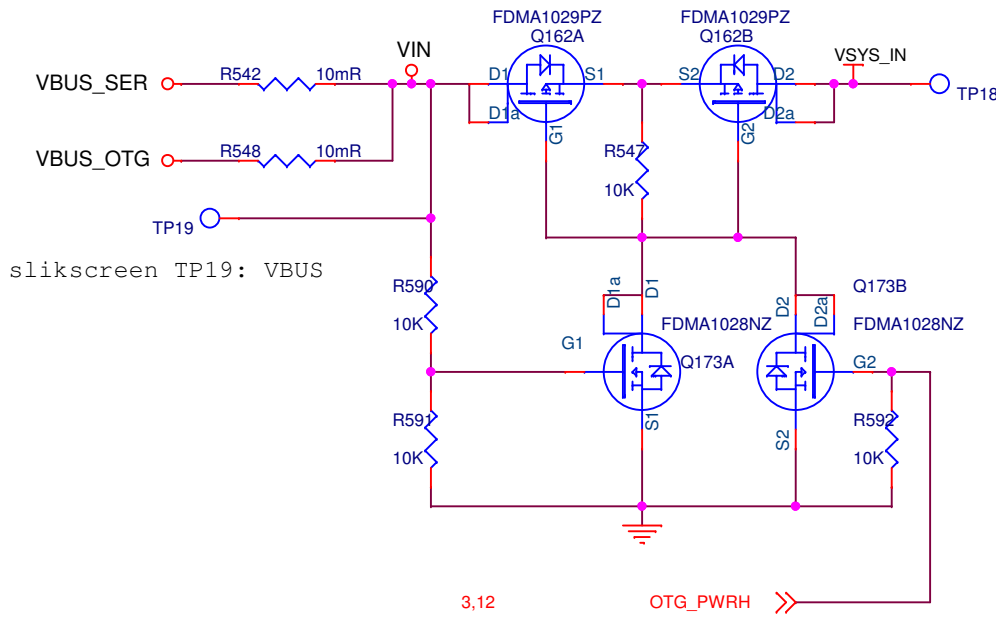
Power Input

Mod: changed to enable both mini and micro USB power bricks

slikscreen TP18: VSYS_IN



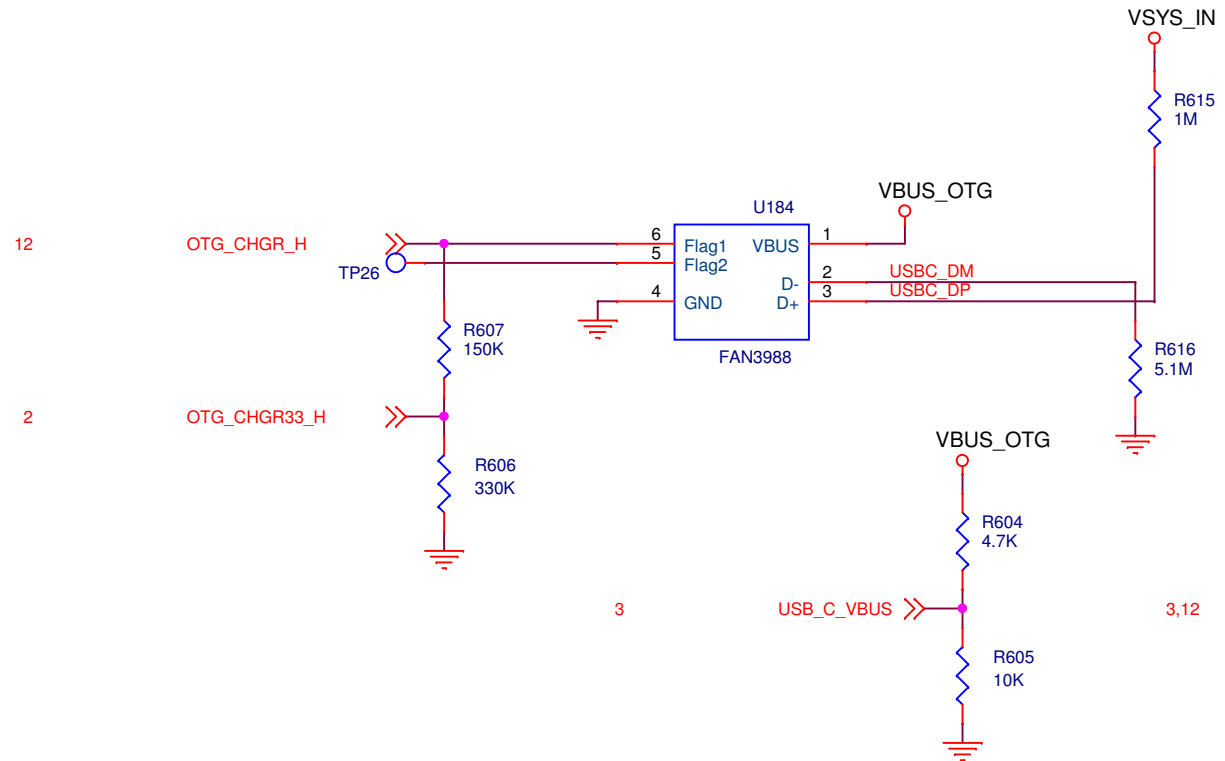
3, 3, 3, 1,2



slikscreen TP19: VBUS

3,12

OTG_PWRH



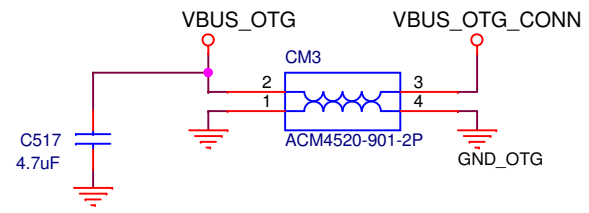
12

2

3

3,12

USB_C_ID

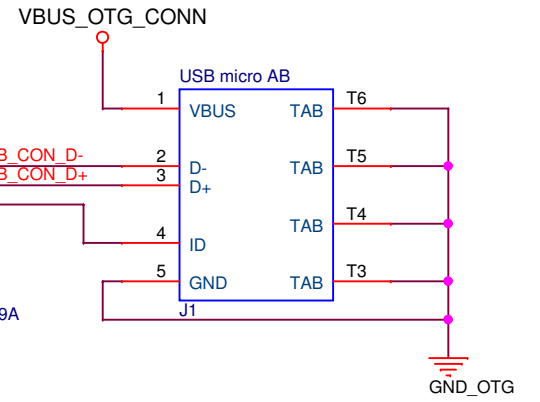


3, 3

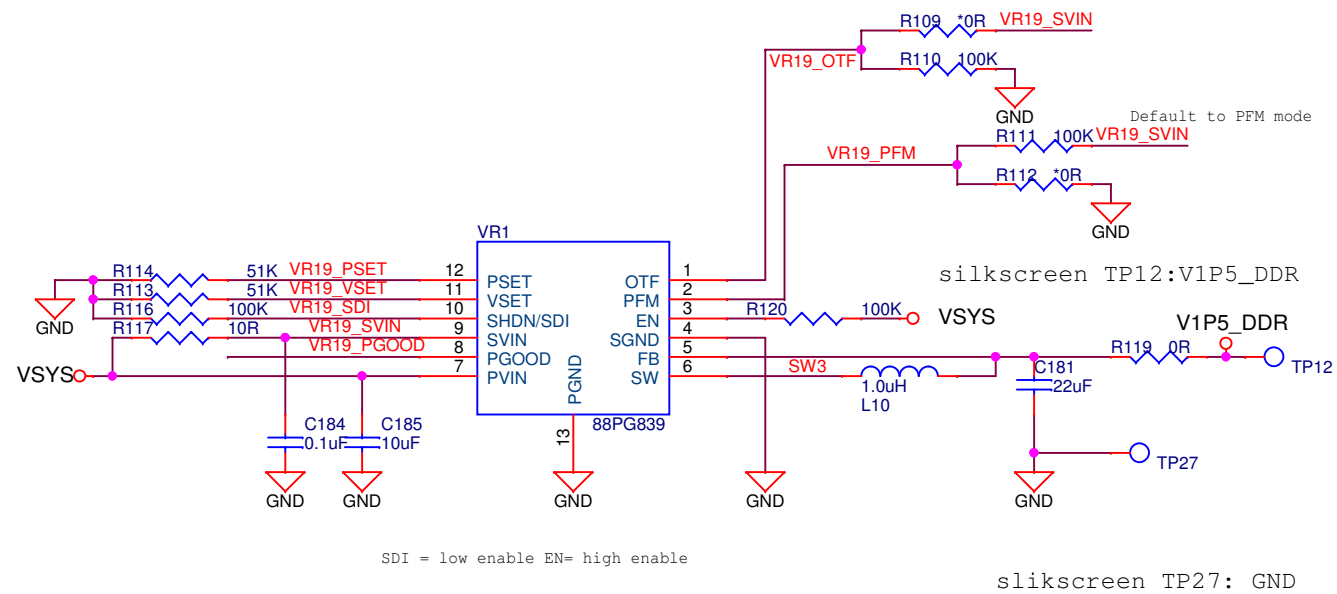
USBC_DM

USBC_DP

Silkscreen: USB OTG



System Power supplies

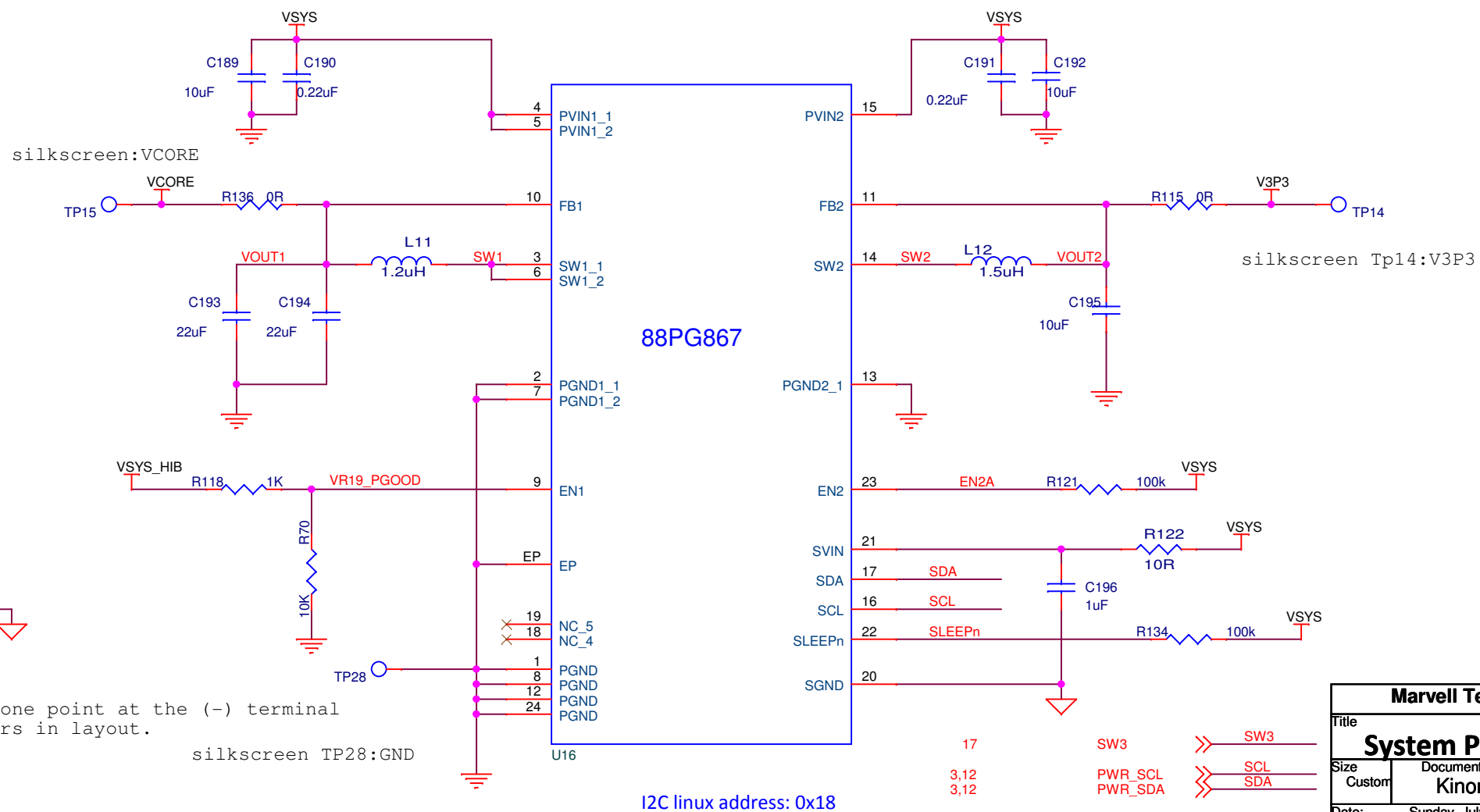


DDR3 1.5V

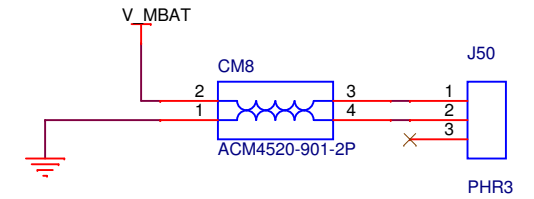
WIFI & other 1.8V

SYSTEM 3.3V

VCORE 1.0V

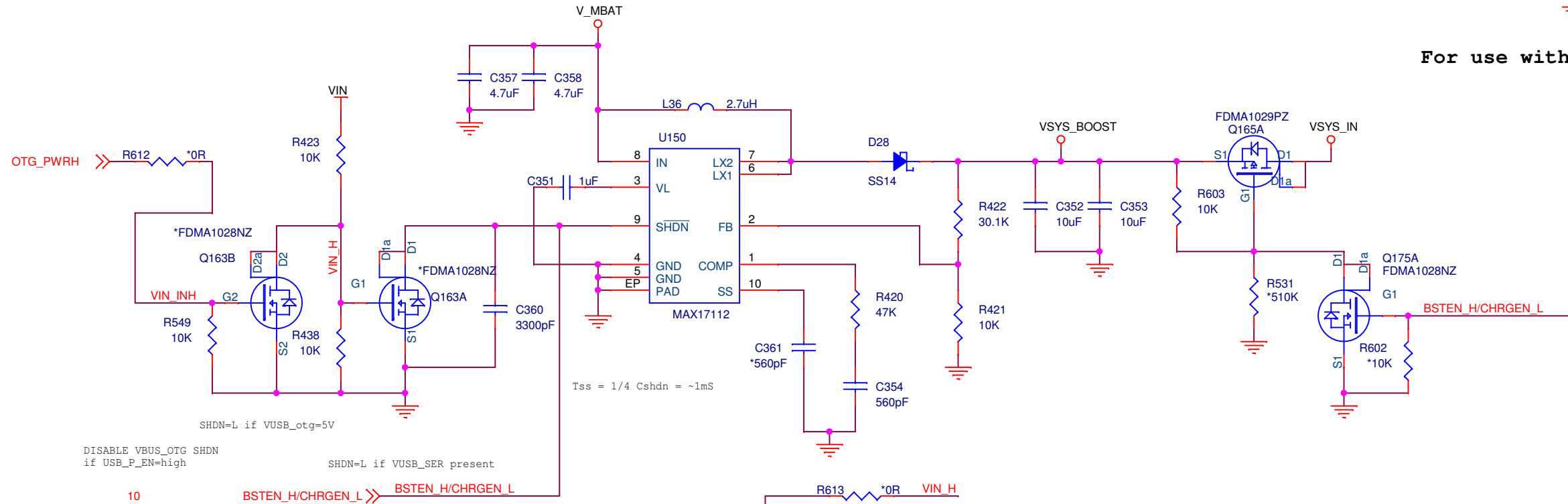


Battery, Charger, Gas Gauge and Boost

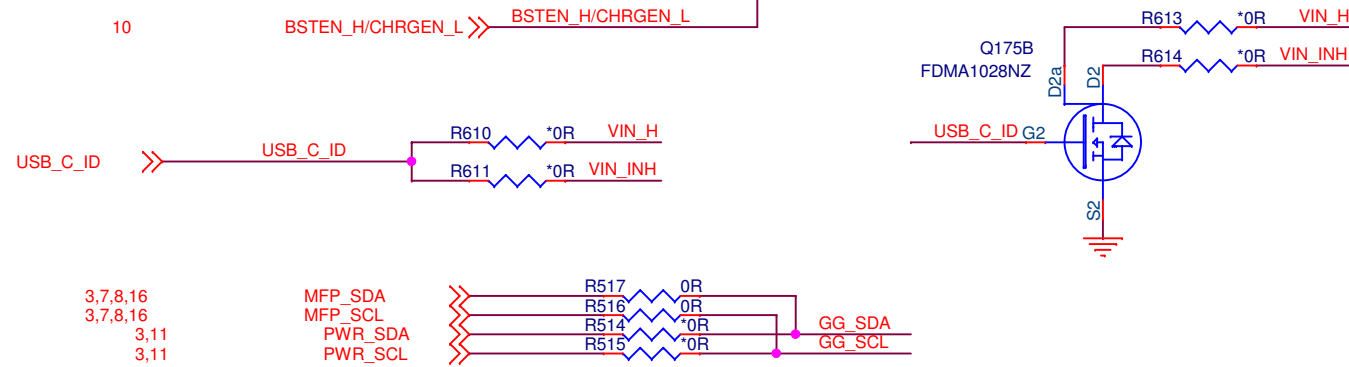


For use with Lithium Ion 18650 batteries

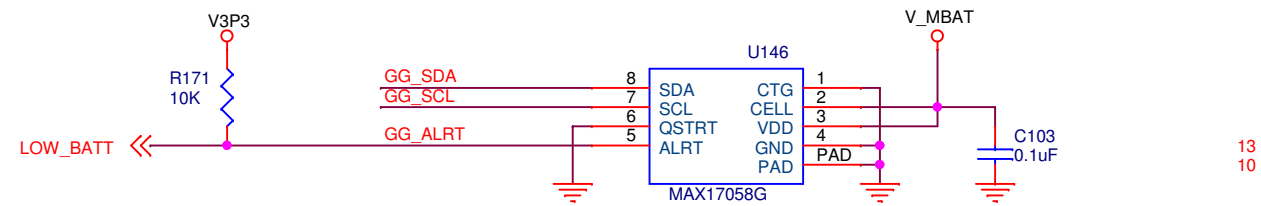
3,10



3,10

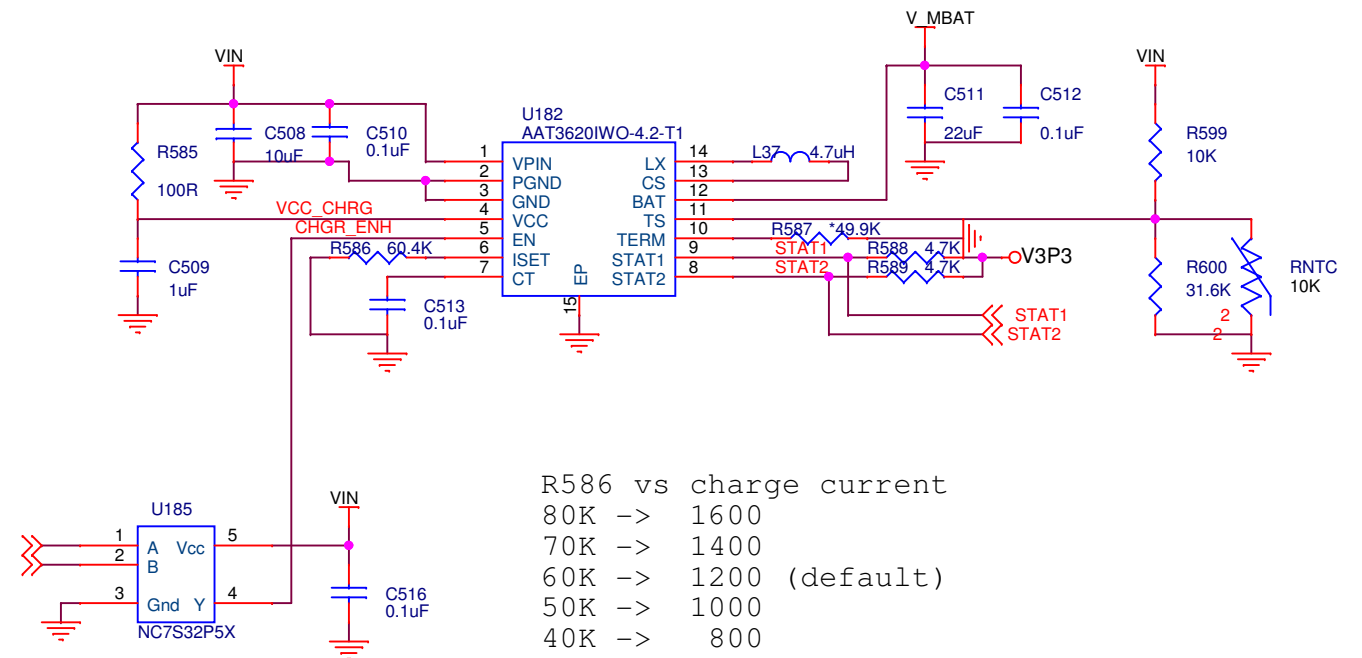


3,10



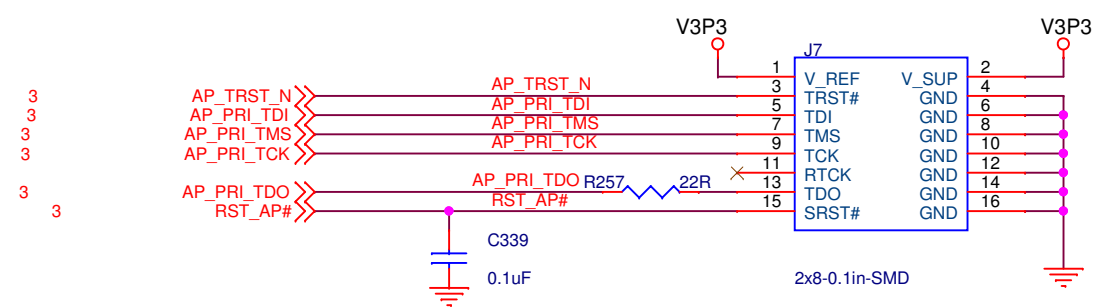
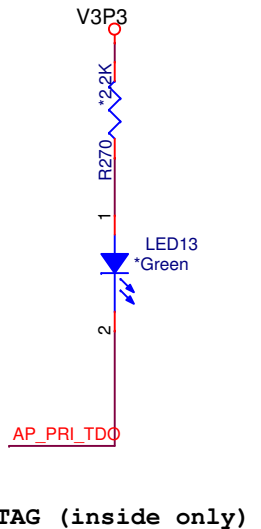
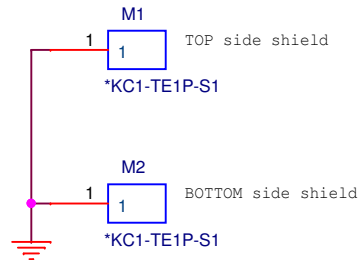
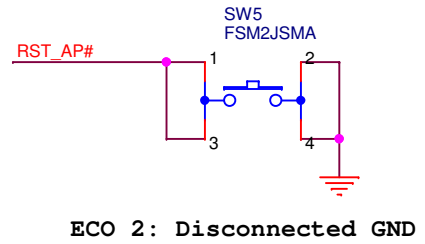
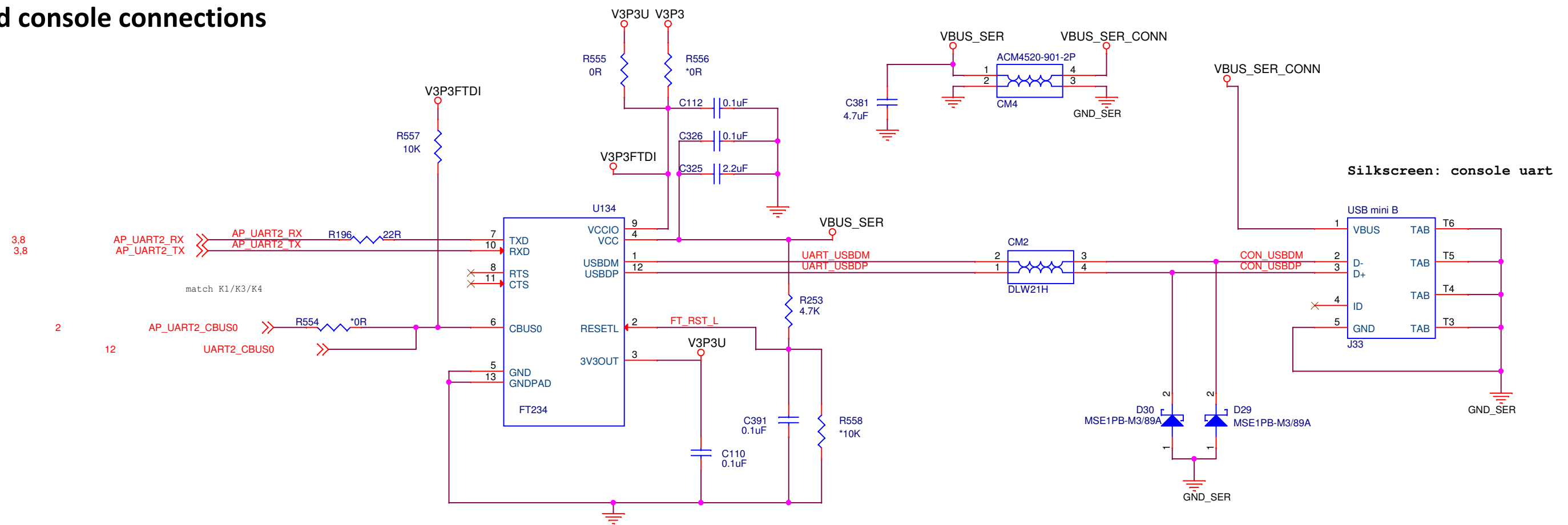
need some driver migration
 ECO x: MAX17058 symbol error fix
 I2C linux address: 0x33

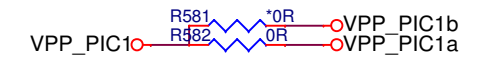
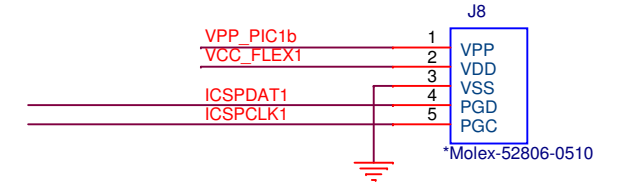
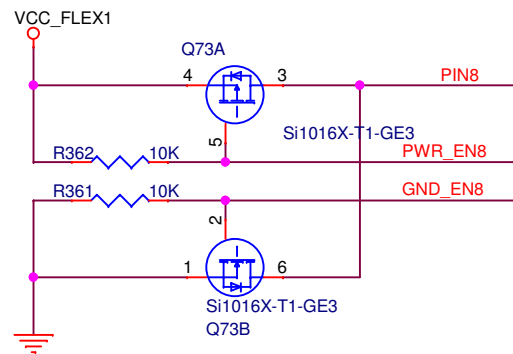
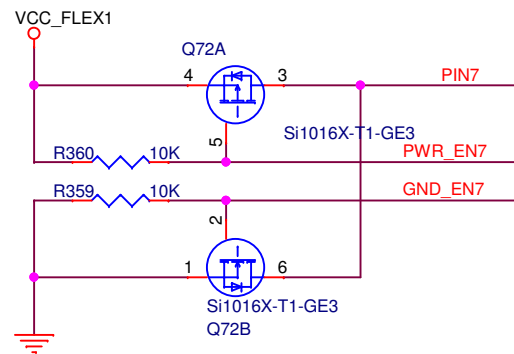
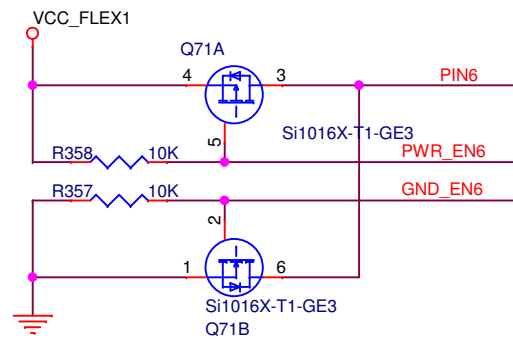
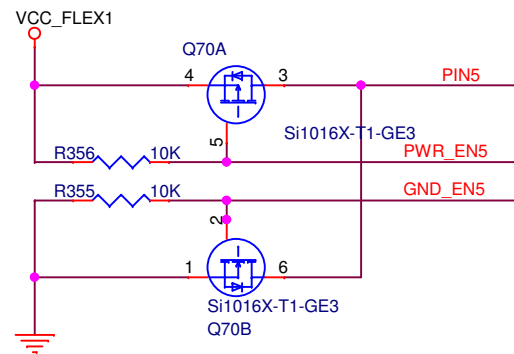
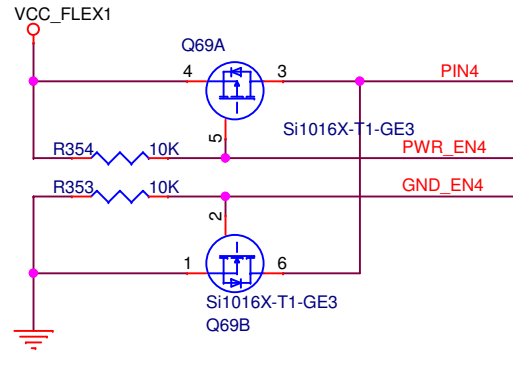
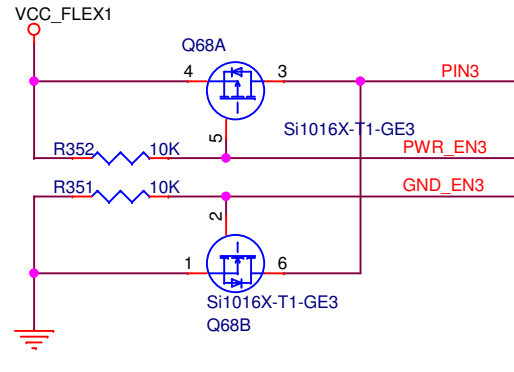
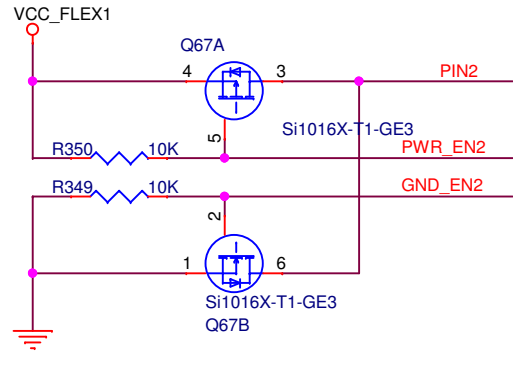
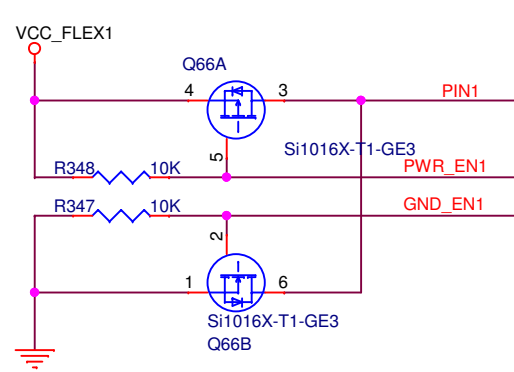
UART CBUS0 - need programming from PC
 Low when connected to Host (disable charger)
 High when connected to Brick



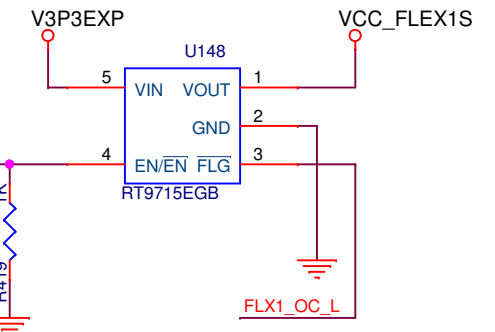
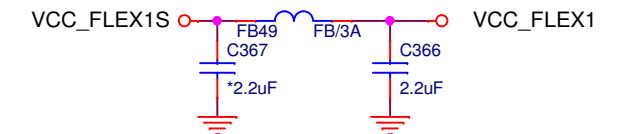
R586 vs charge current
 80K -> 1600
 70K -> 1400
 60K -> 1200 (default)
 50K -> 1000
 40K -> 800
 30K -> 600
 20K -> 400

Debug and console connections

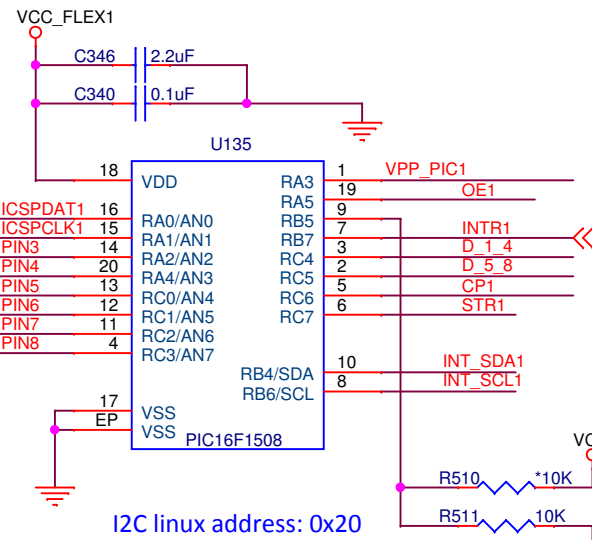
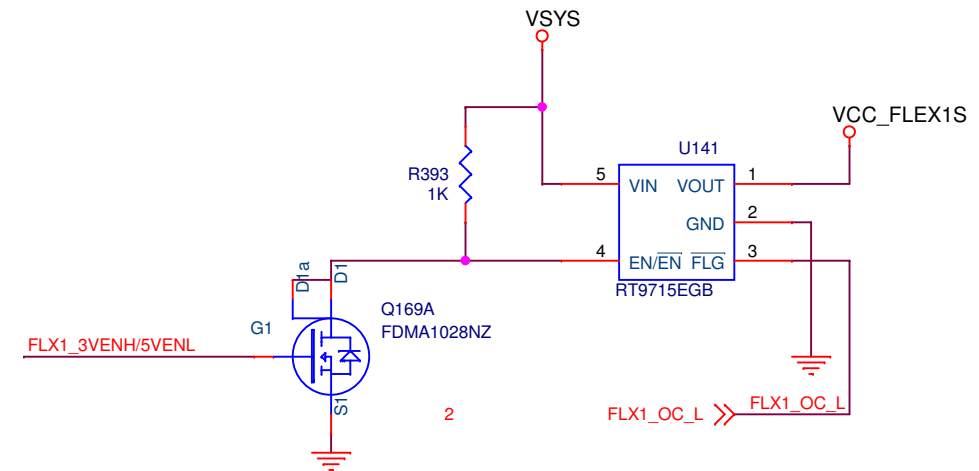




Place close to pin wide trace for V5P0FEXT

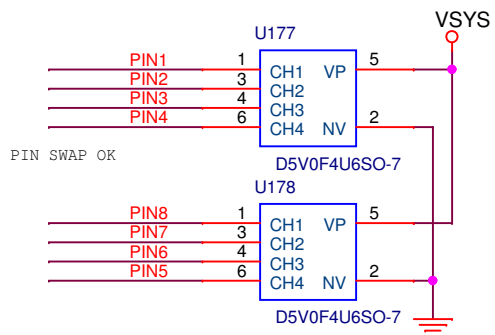
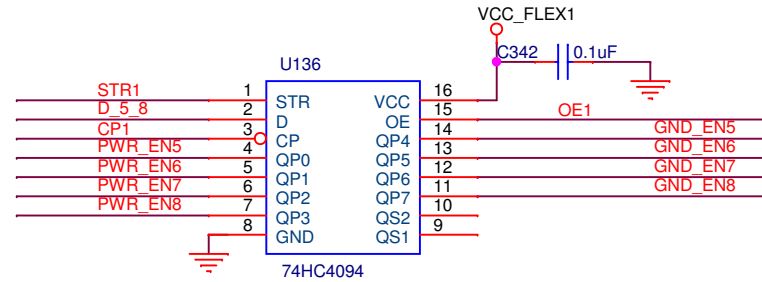
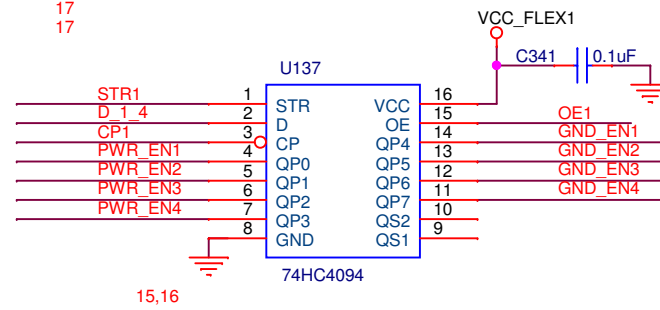


ECO 4: 5V feed to PIC



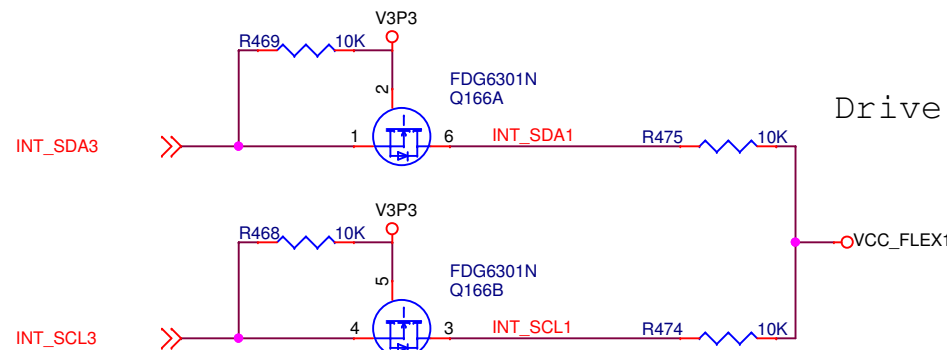
I2C linux address: 0x20

Note: Need location from ID

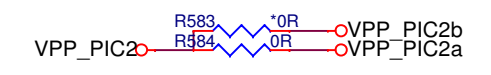
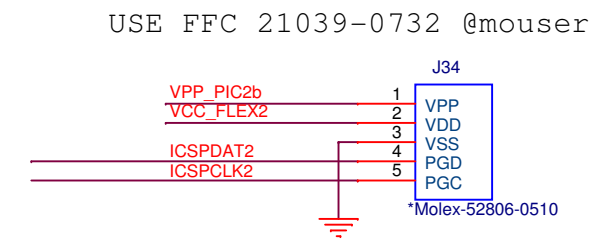
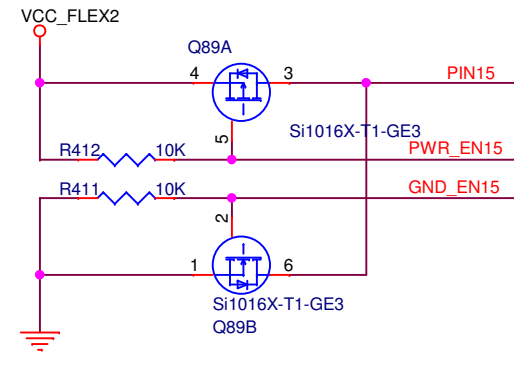
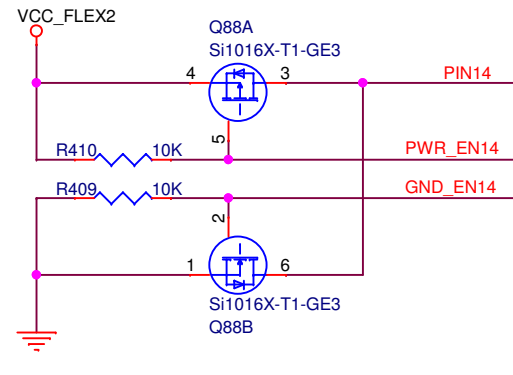
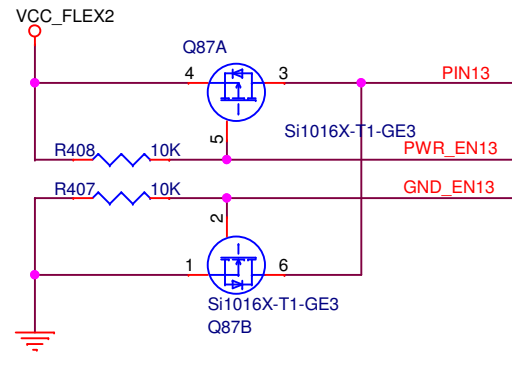
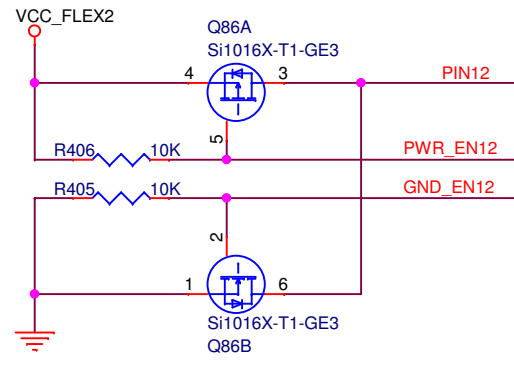
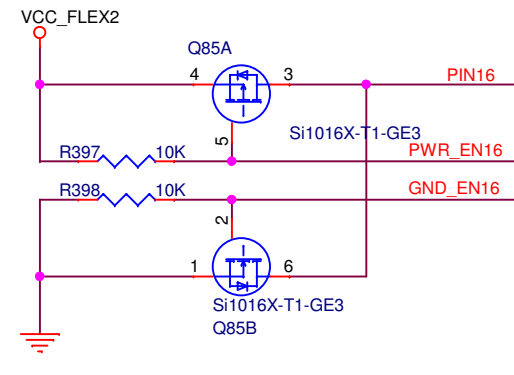
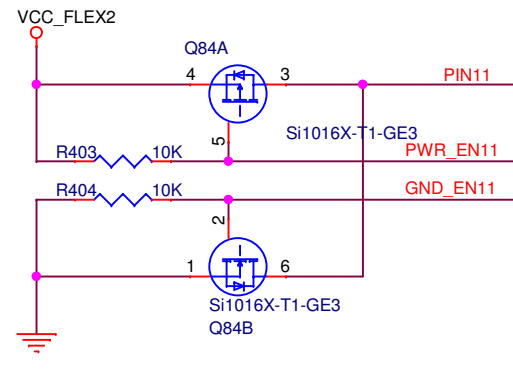
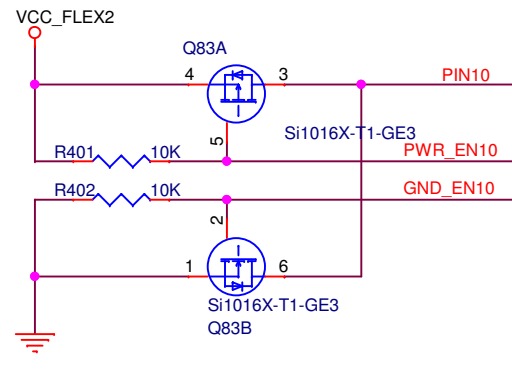
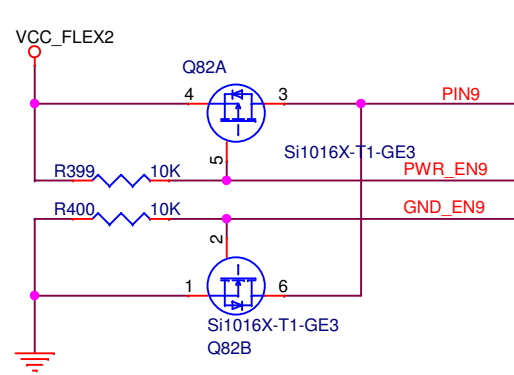


15,16

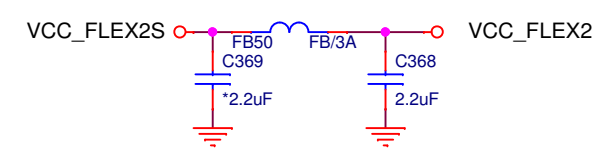
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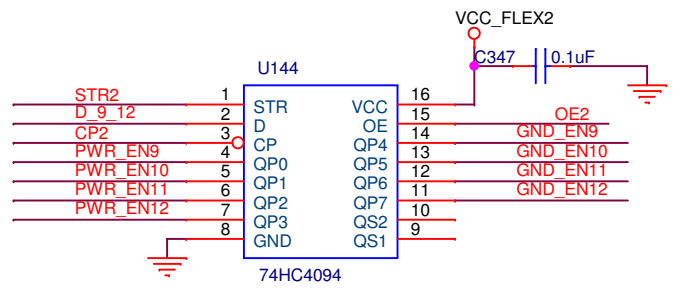
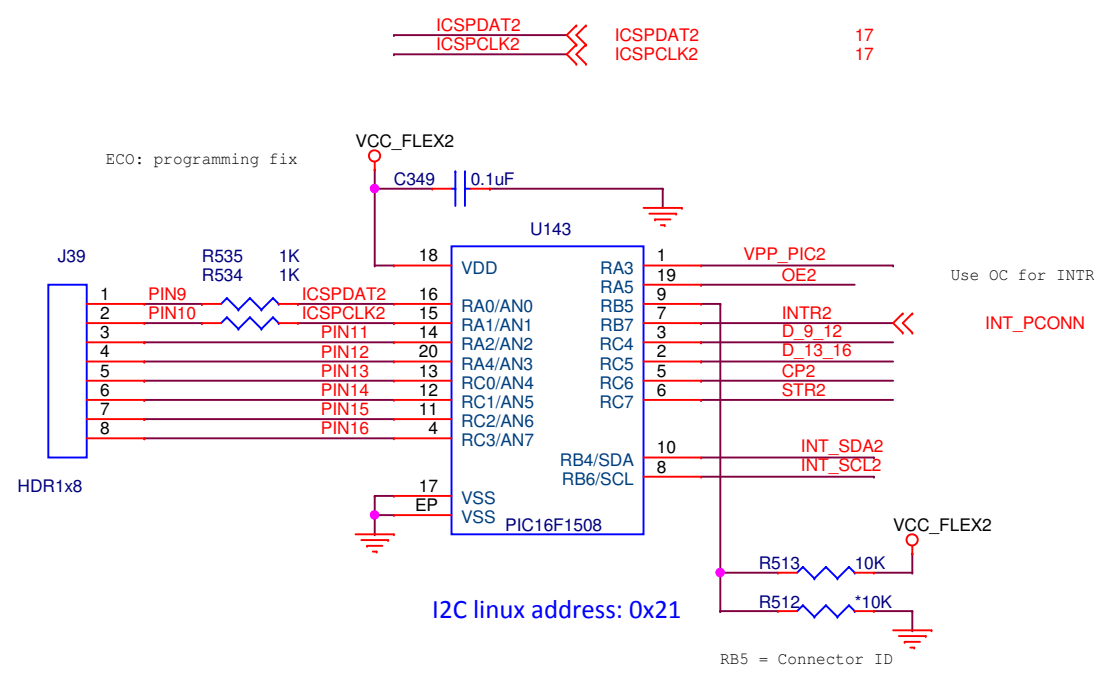
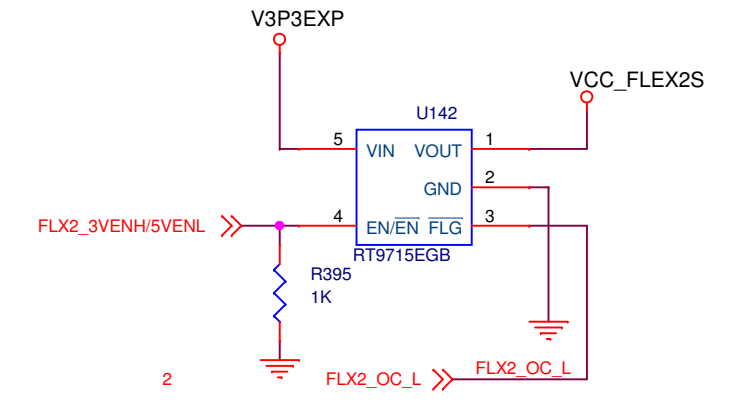
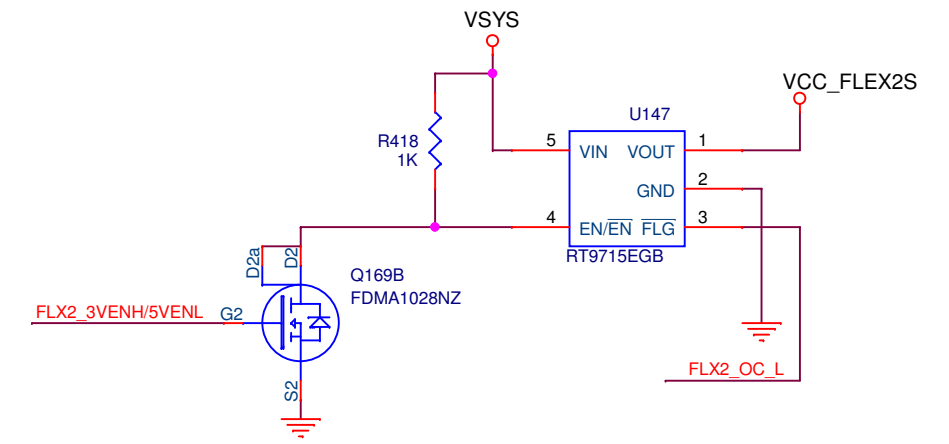
Drive OE low during programming



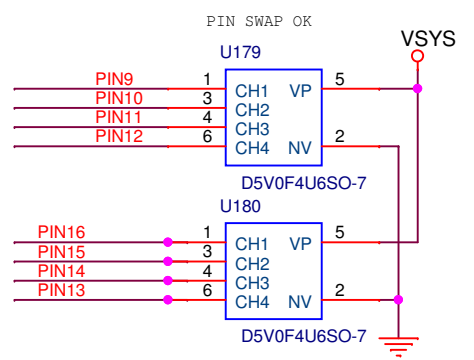
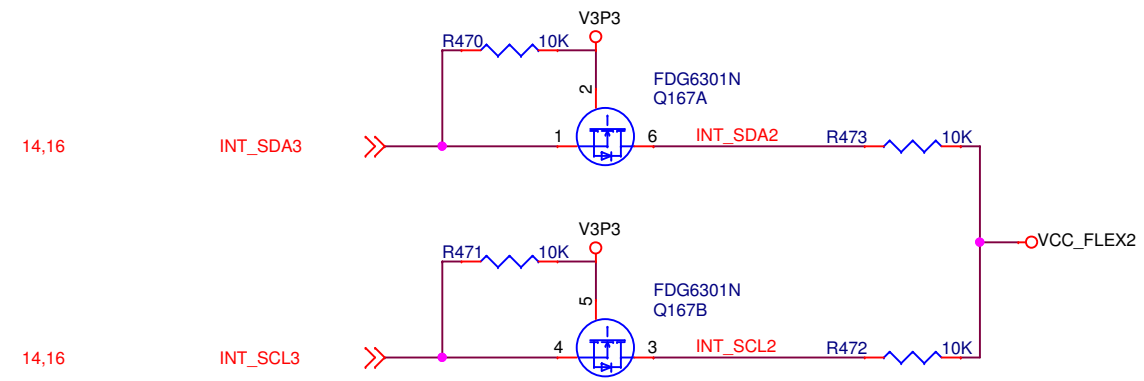
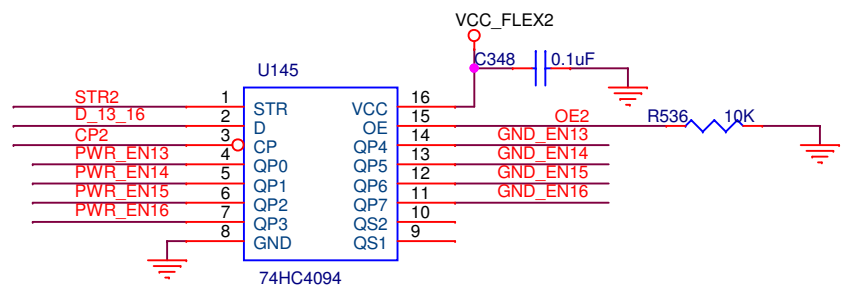
Place close to pin wide trace for V5P0FEXT

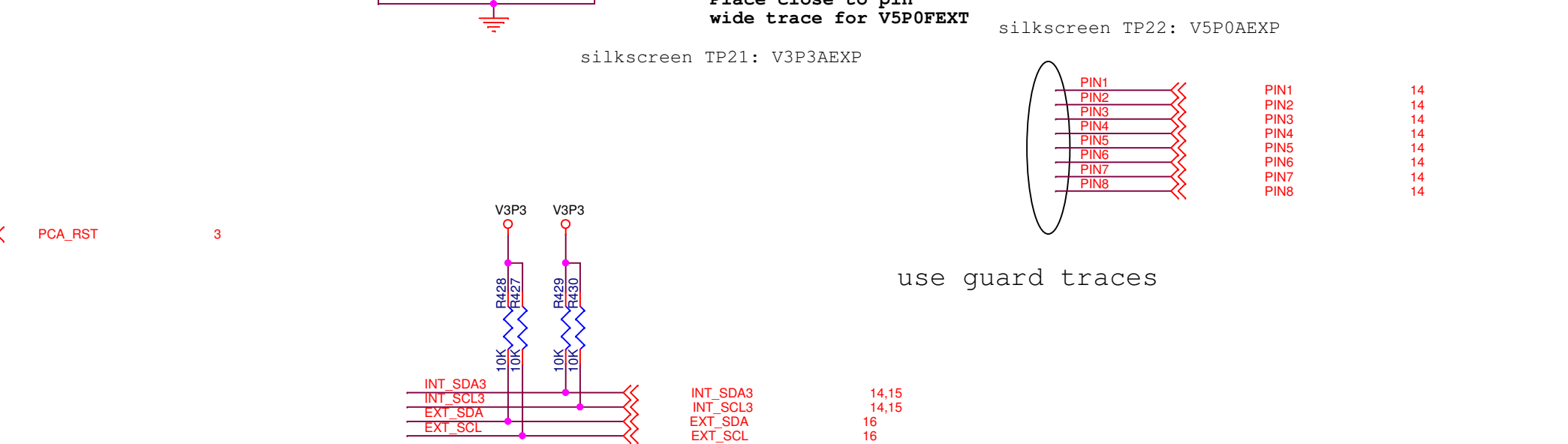
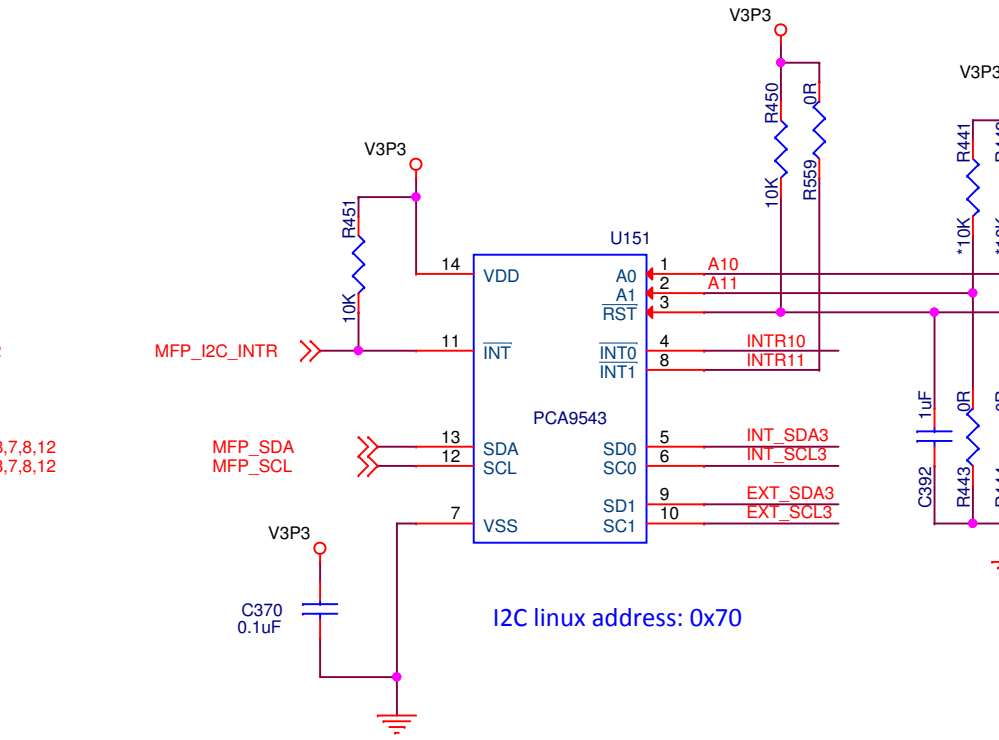
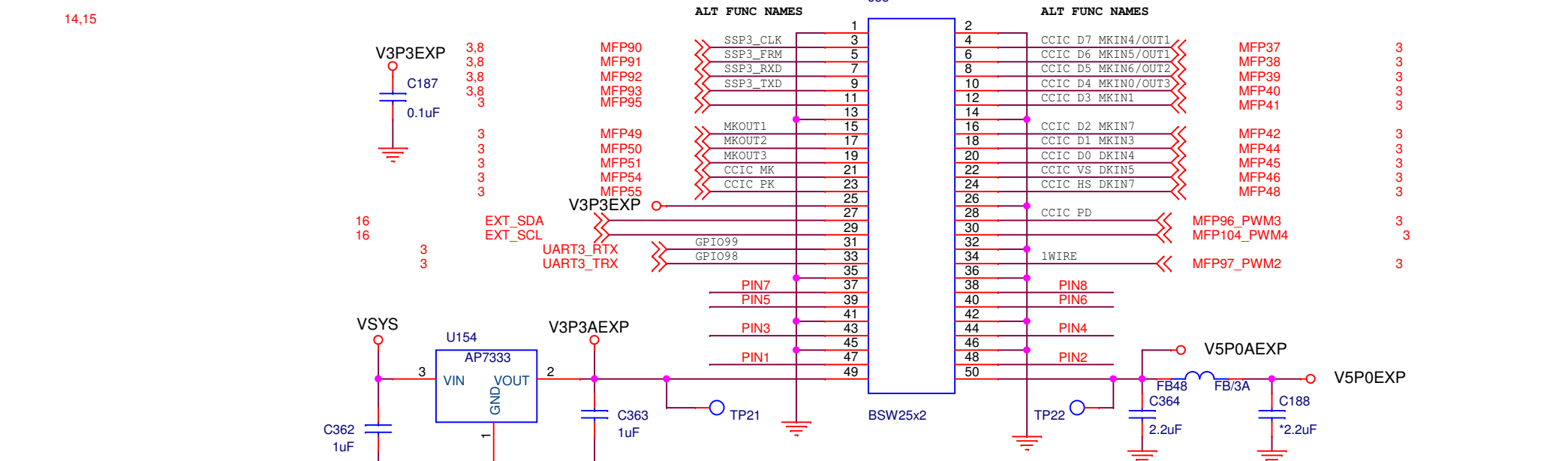
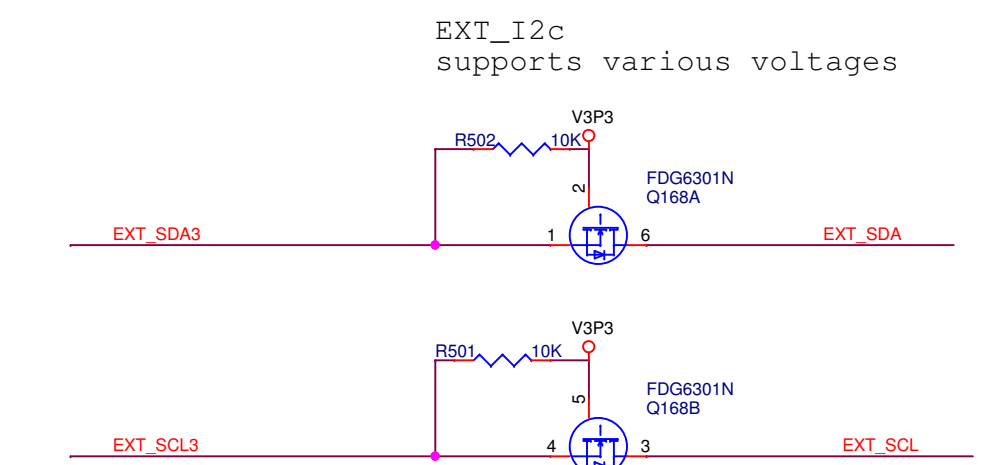
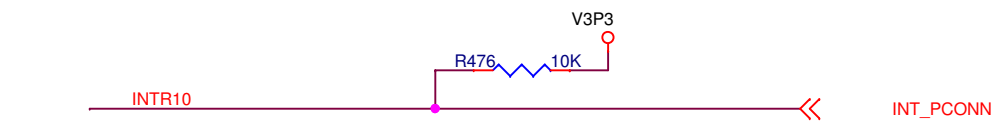
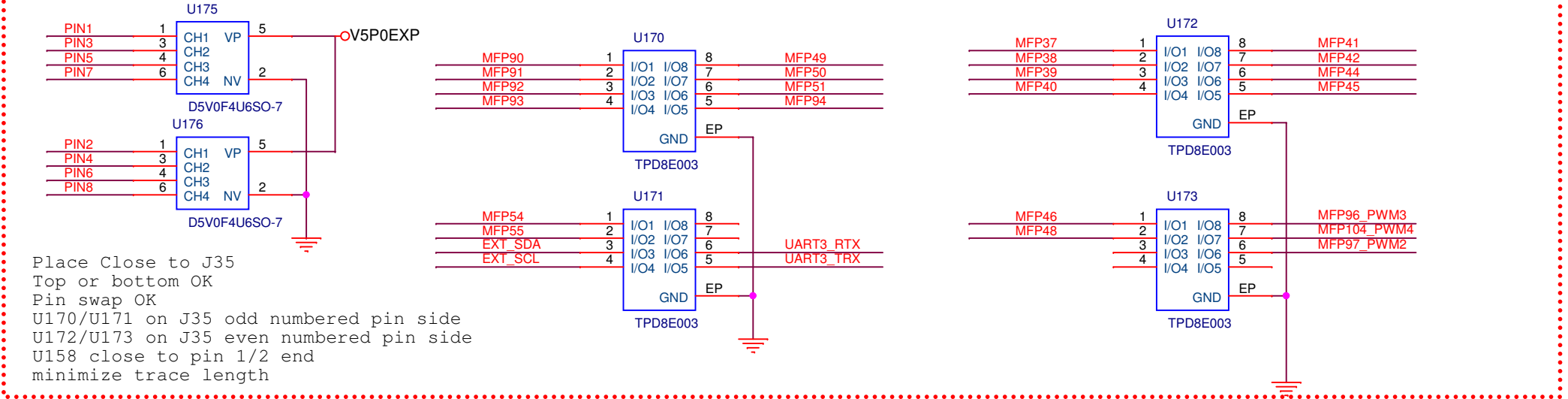
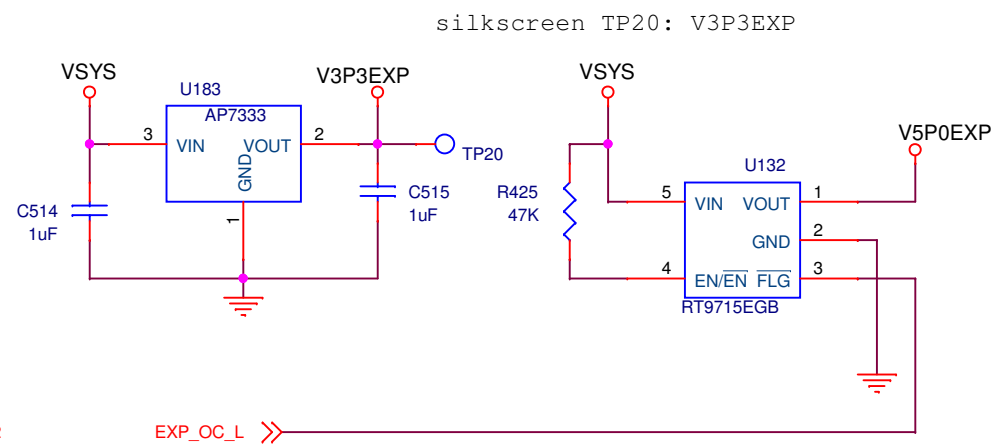


ECO 4: 5V feed to PIC

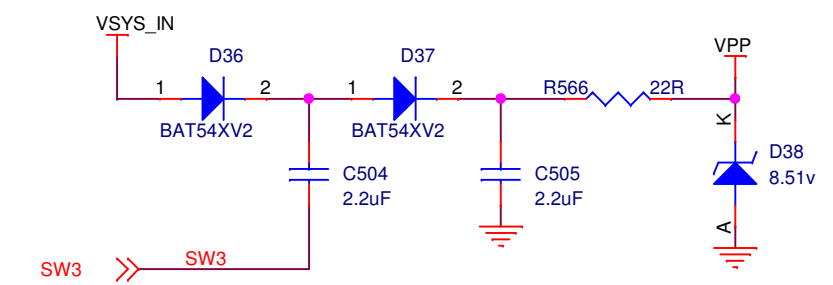
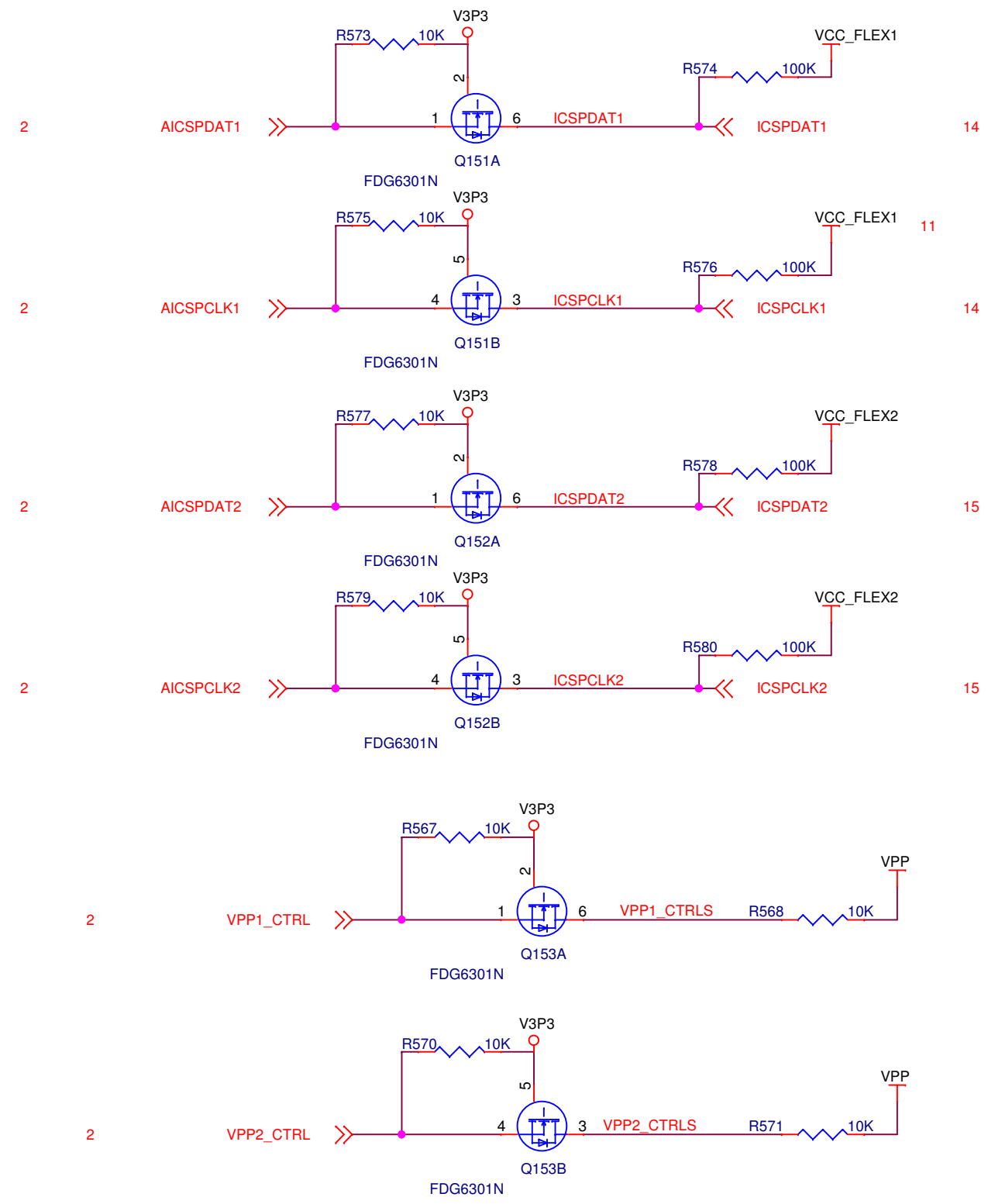


Any case, VCC=5V signal3.3V

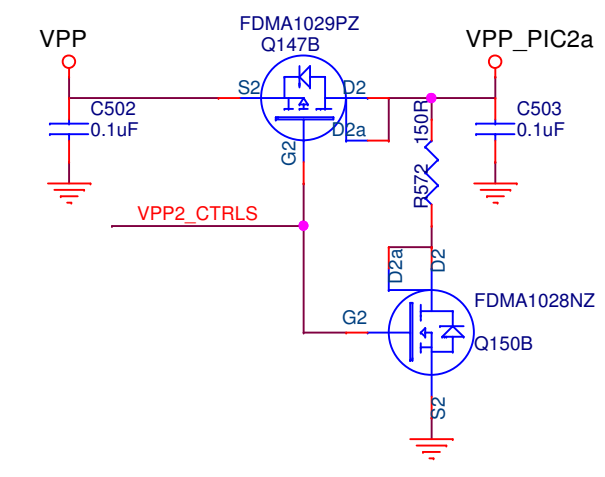
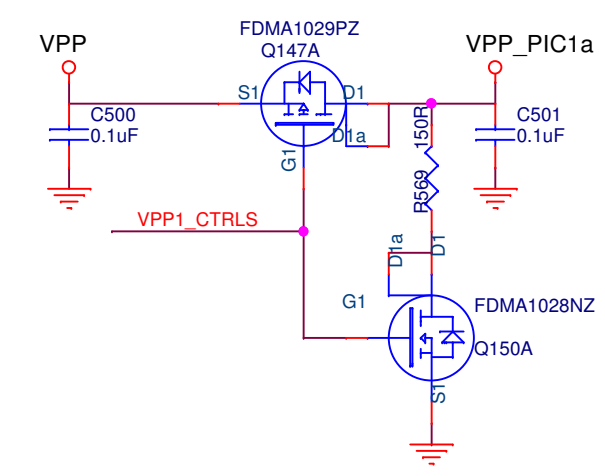




Revised 50 pin, tied to top 8 pins



Power for micro controller



Functional changes from K4R2



- enable hibernate
- enable miniUSB charging
- PIC programmer
- new charger
- USB device power

Circuit changes from K4R3

- P10,P13: added USB power common mode chokes
- P10,P13: populated common mode chokes on USB data
- P14-P16: change i2c mosfets
- P14,P15: rewire programmer connector
- P10: added micro USB pull up for detection
- P12: remove Q163 VIN detection feature due to slow transition to battery

Circuit changes from K4R2

- P01: install Q155 depopulate R336 for hibernate
- P01: added GPIO for PIC programming controls
 - ICSPDAT1 GPIO17
 - ICSPCLK1 GPIO21
 - VPP1_CTRL GPIO3
 - ICSPDAT2 GPIO13
 - ICSPCLK2 GPIO8
 - VPP2_CTRL GPIO2
- P02: signal MFP94 renamed to MFP95
- P03: new mosfets for power sequence
- P06: new values for antenna matching
- P07: CE156 power switch added
- P10: revised power input
 - allow charging from both mini and micro bricks
 - added shutdown control to PIC for low battery cut off to prevent over drain of battery
- P12: U146 MAX17058 Symbol error fix
 - new charger up to 2A switching to speed up charging
 - added cutout switch to boost supply to avoid leak
- P17: PIC programmer VPP supply and signals

Marvell Technology Ltd			
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