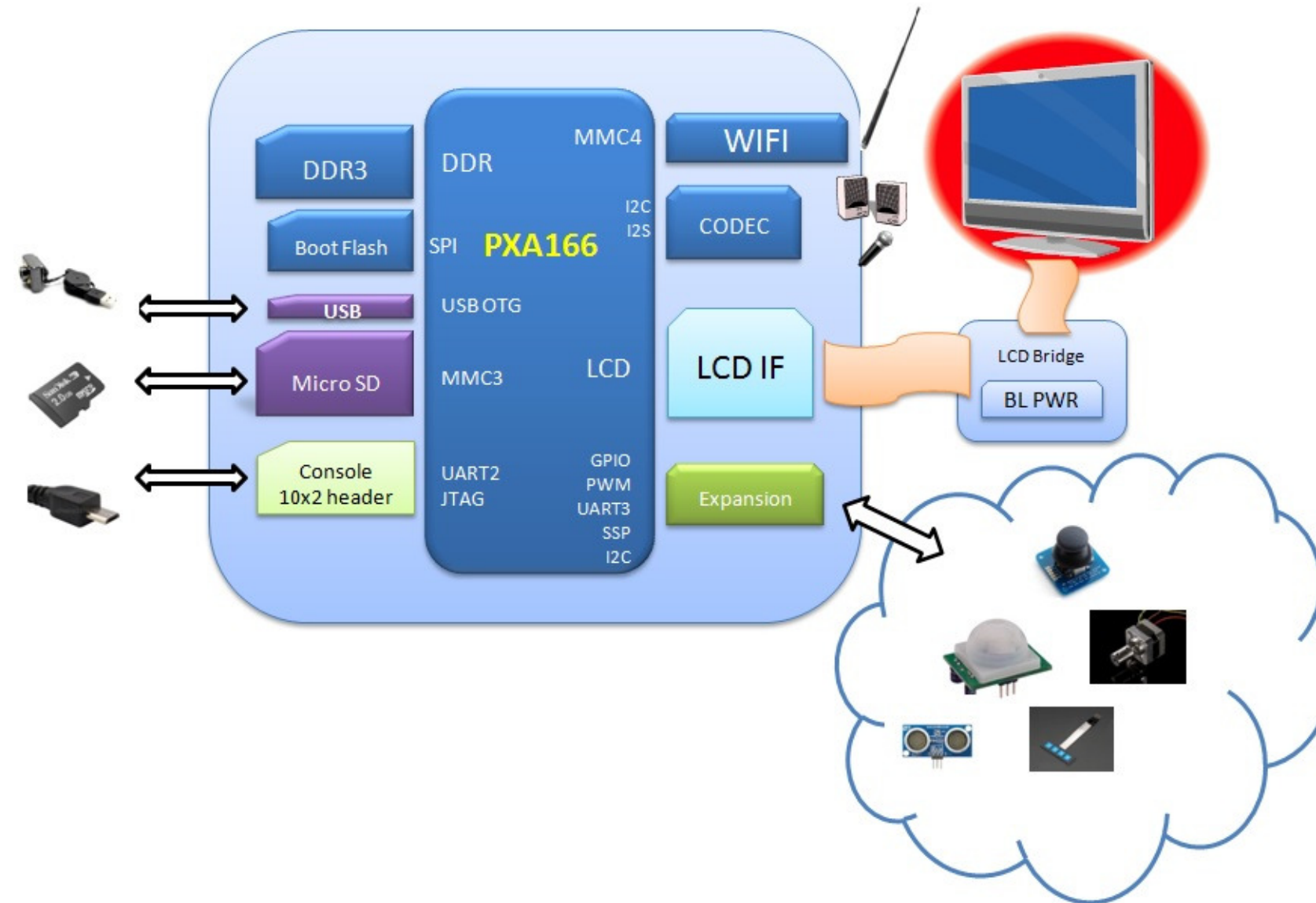
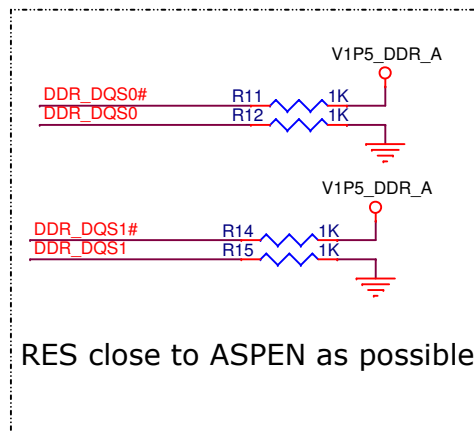
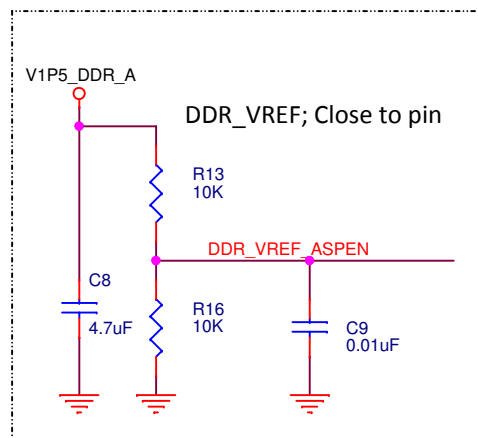
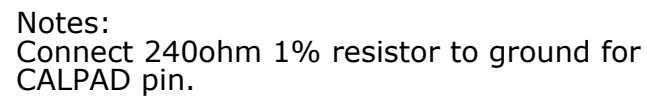
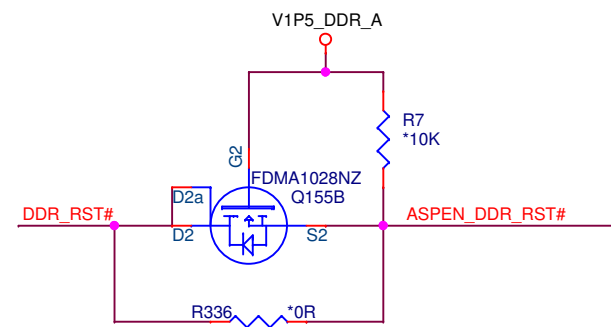


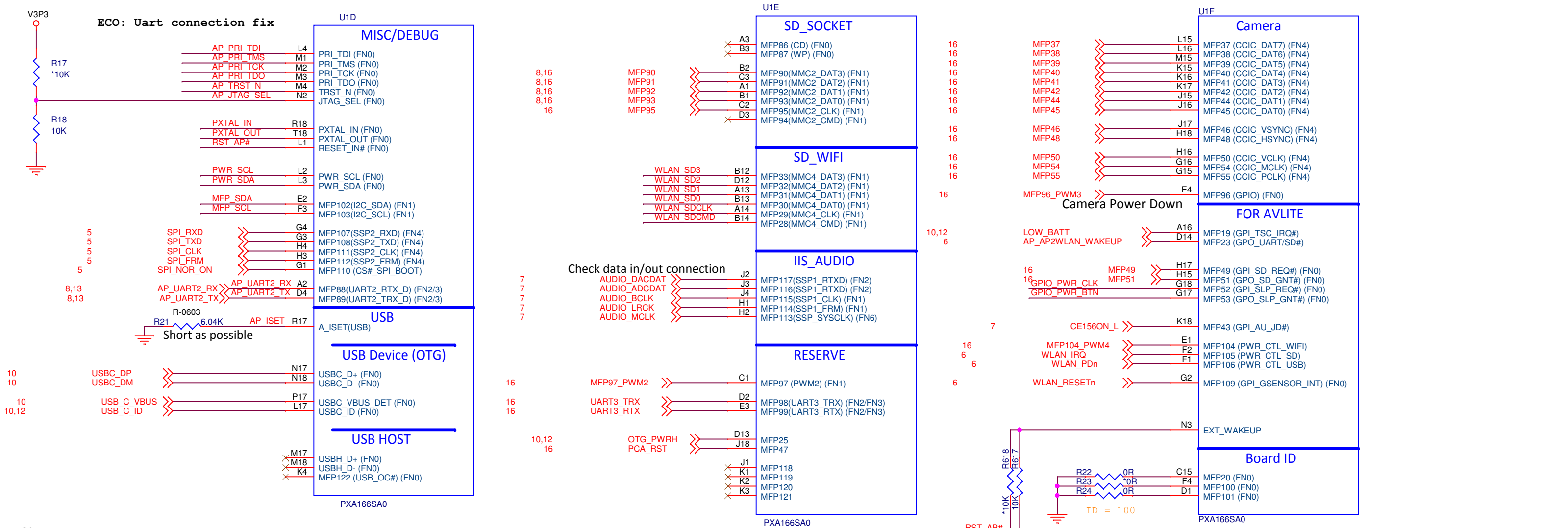


This Design is given "AS IS" without warranty of any kind, either expressed or implied.

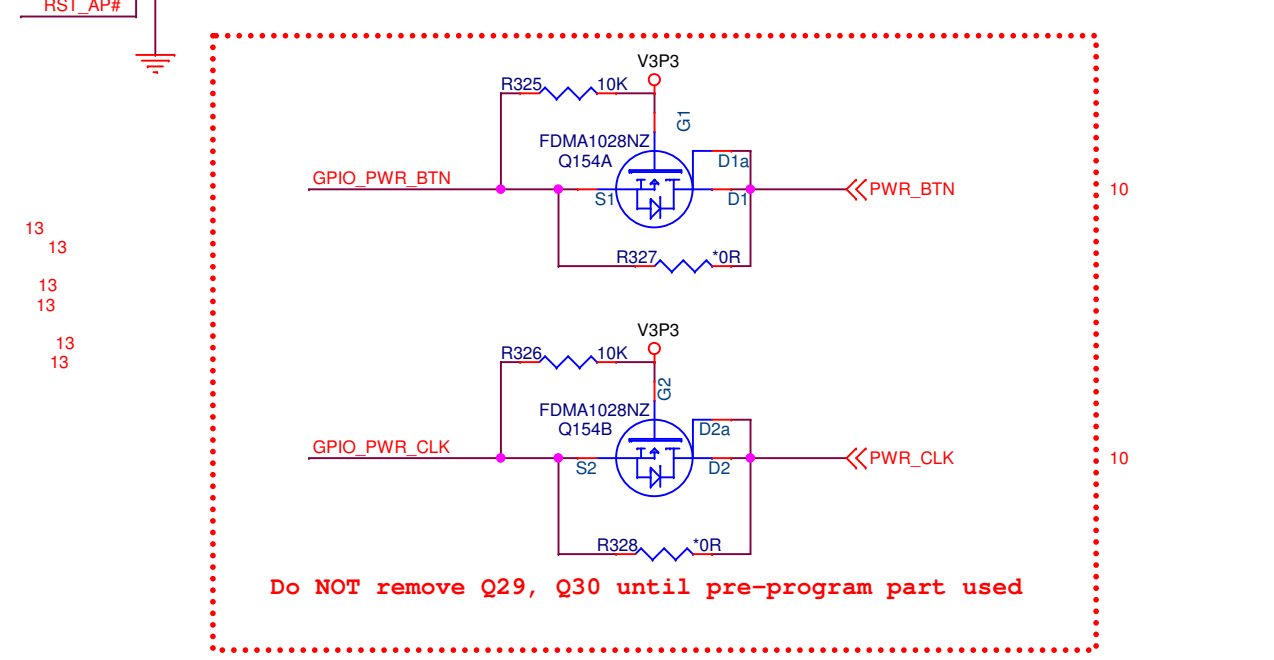
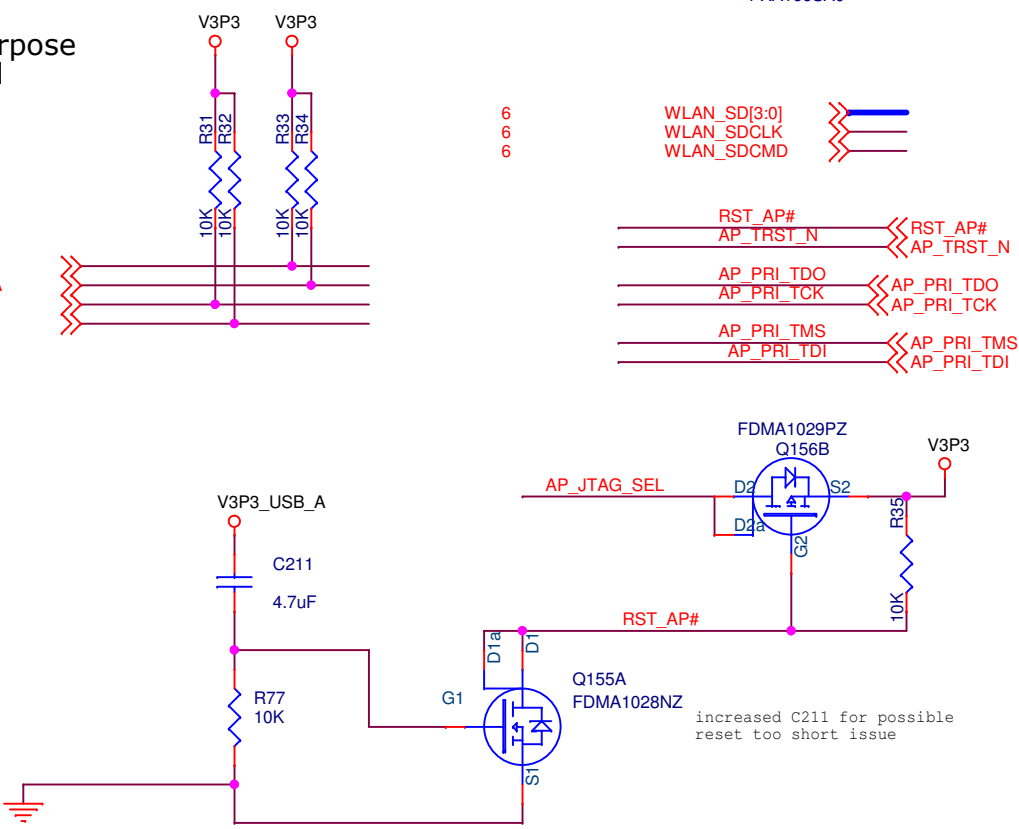
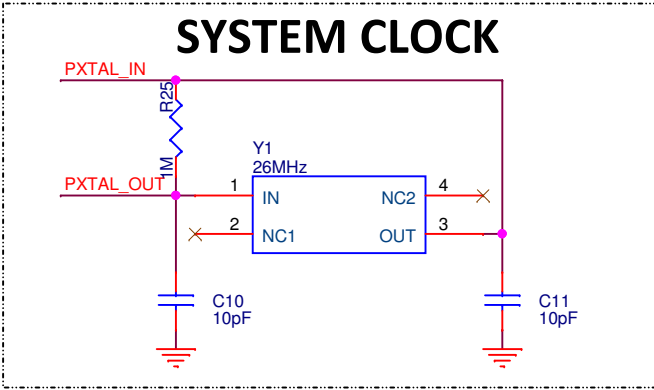
DDR3 MEM



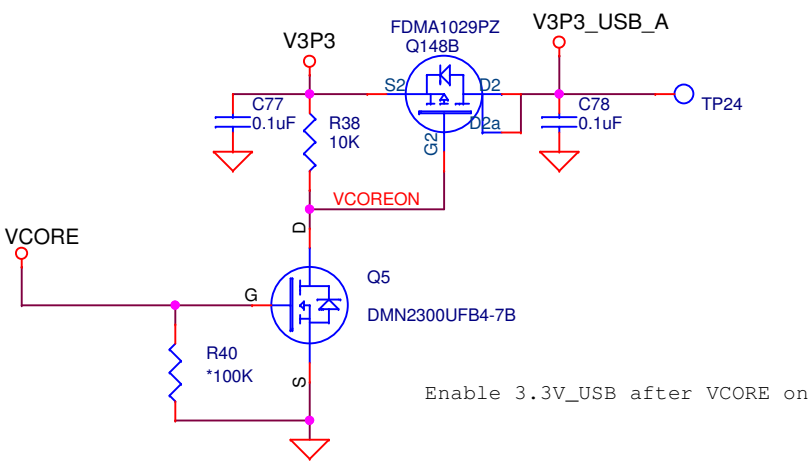
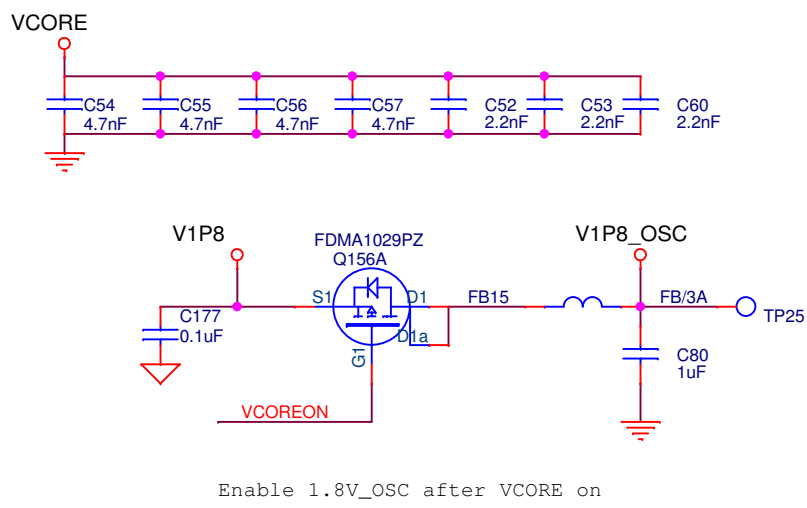
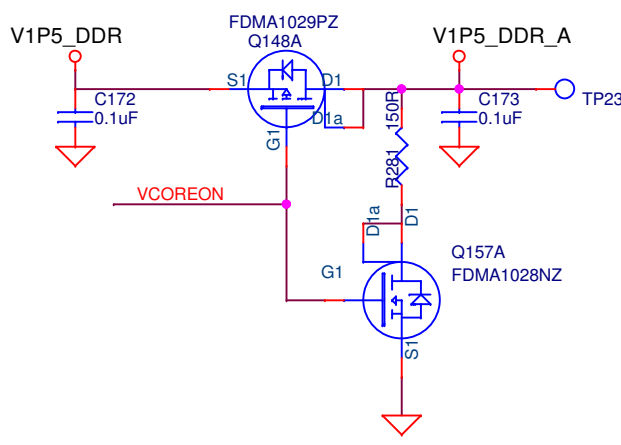
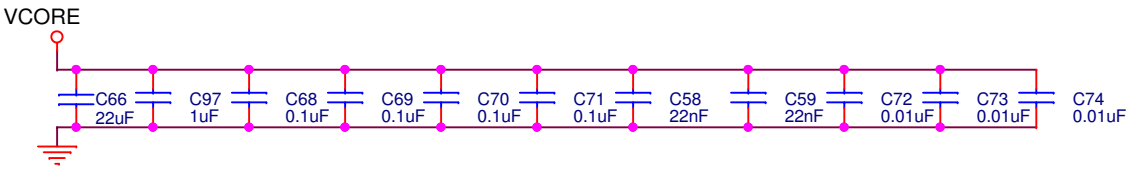
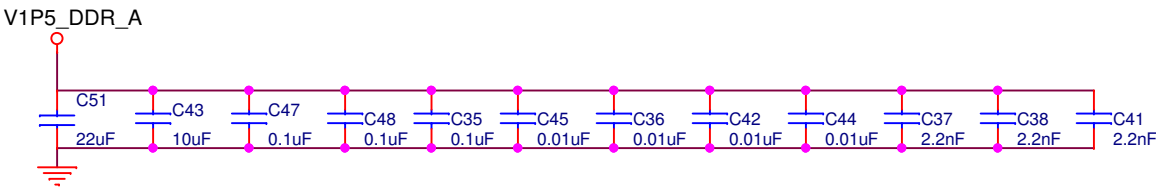
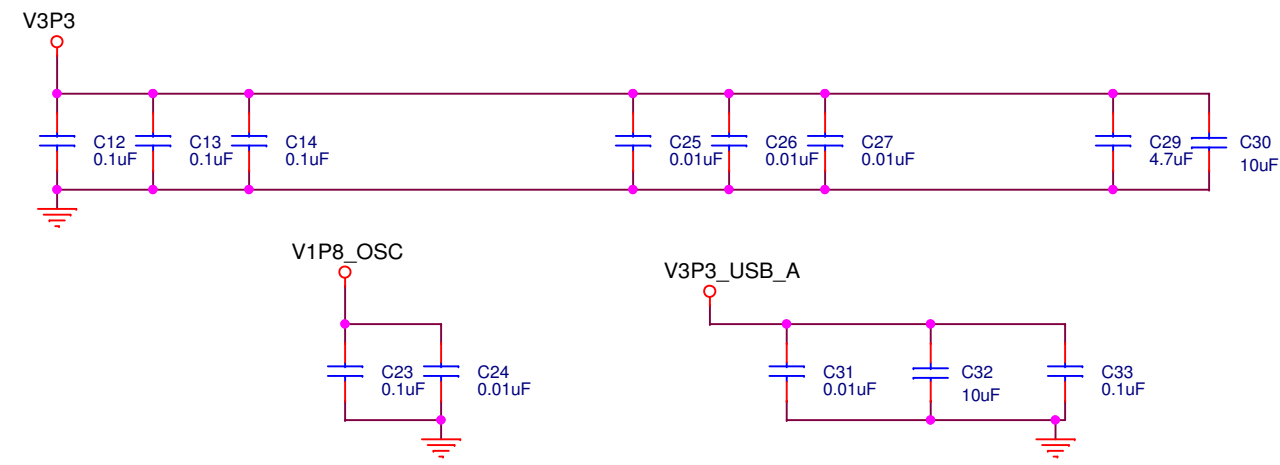
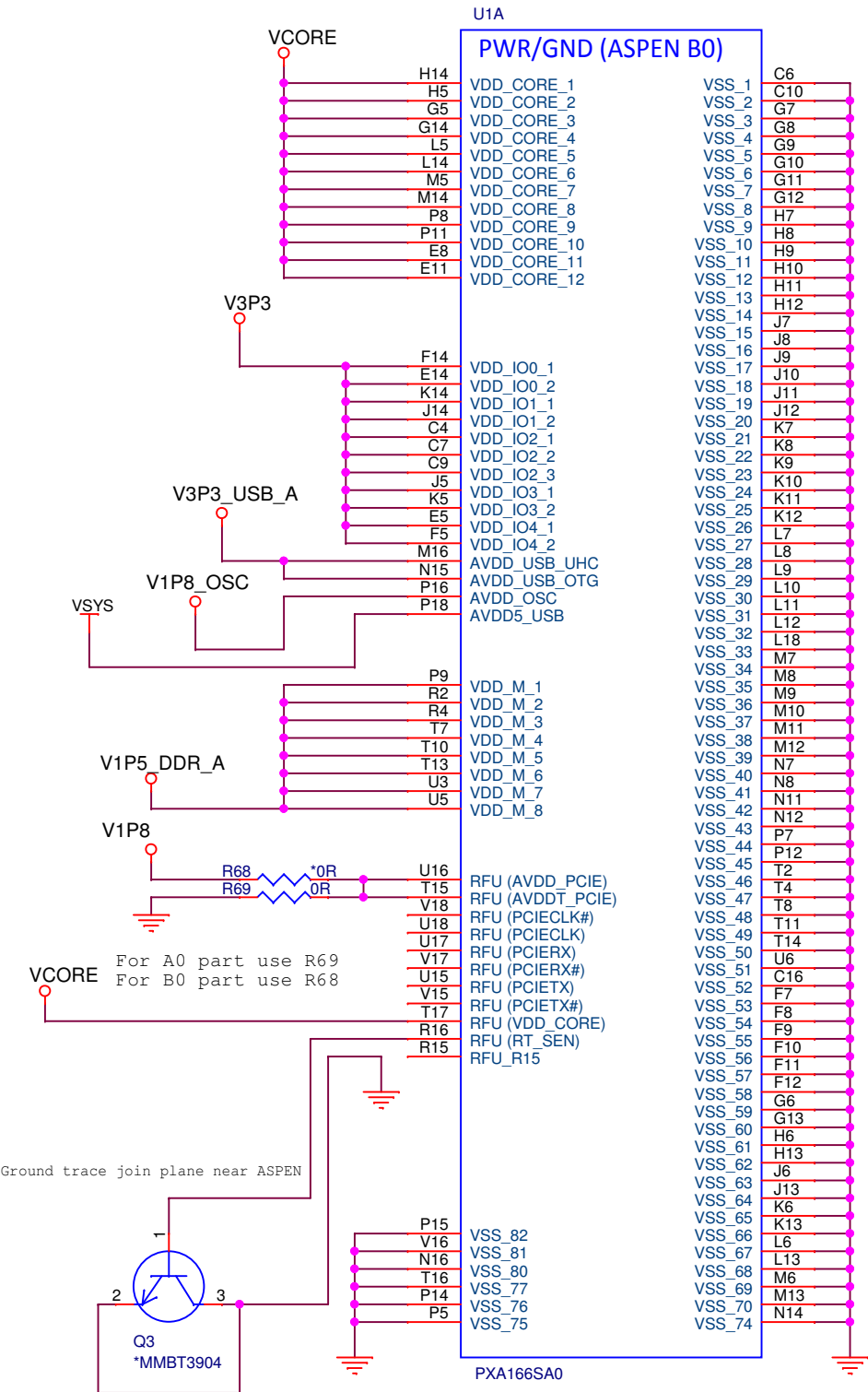
ASPEN-DEBUG/SDIO/SSP/UART/MISC



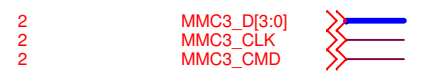
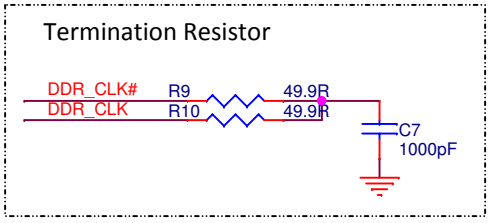
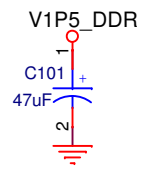
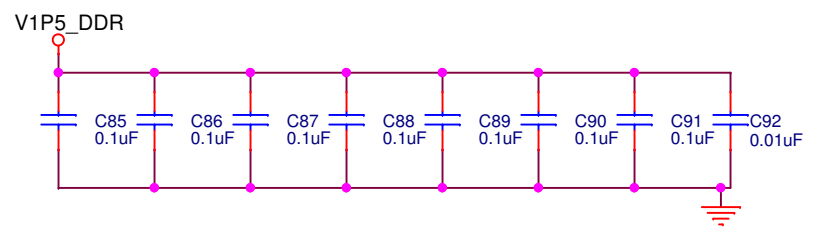
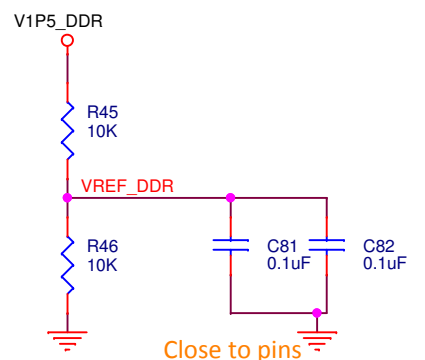
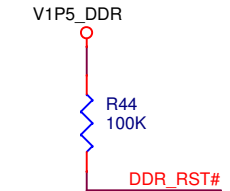
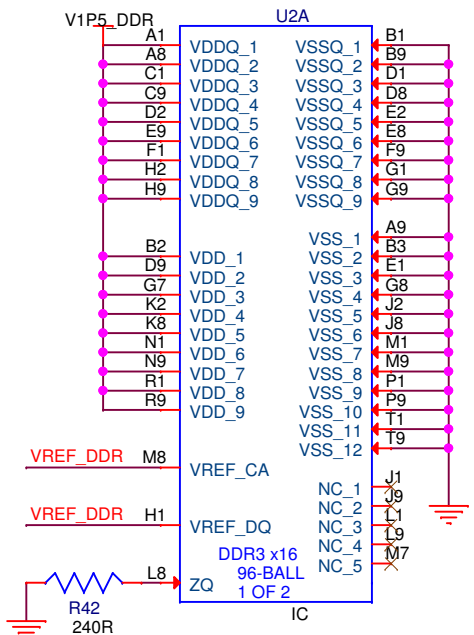
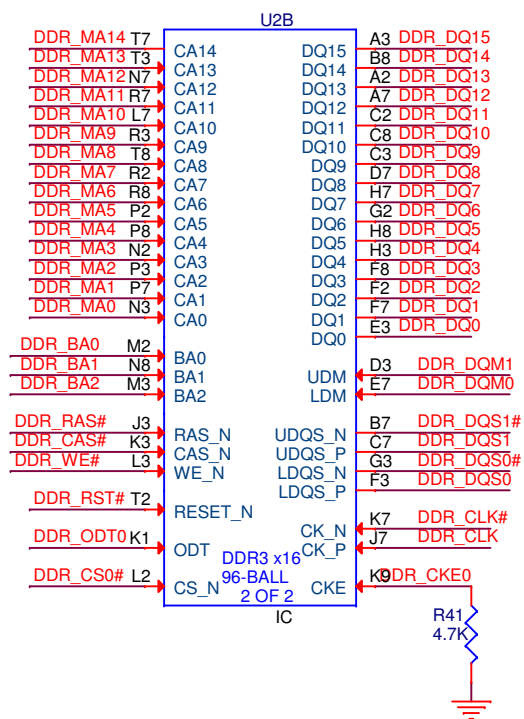
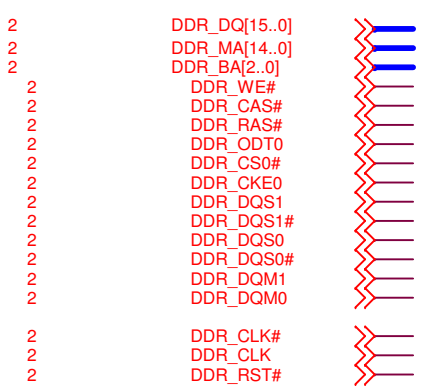
- Notes:
1. MFP110 is dedicated for SPI NOR FLASH BOOT purpose
 2. A_ISET: connect 6.04Kohm 1% resistor to ground



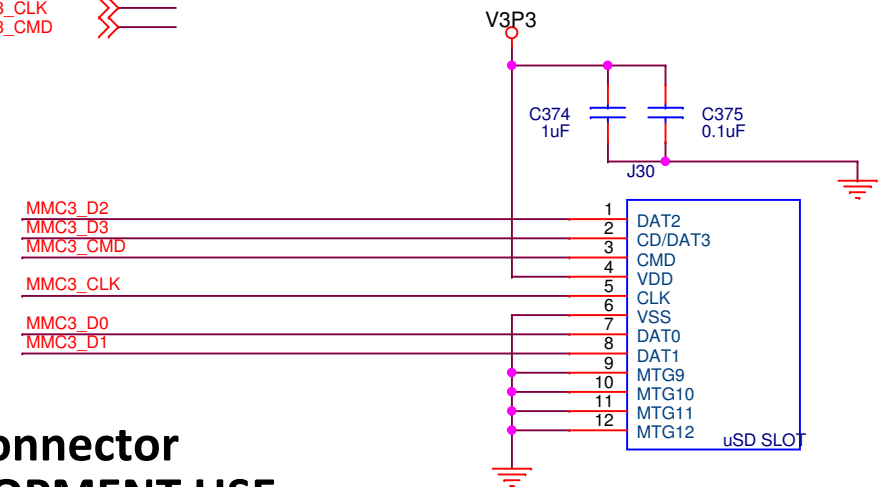
ASPEN - Power



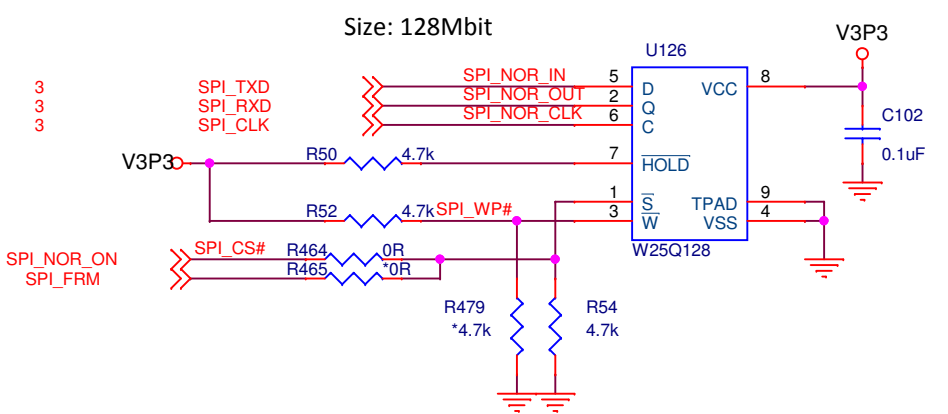
Footprint 4Gb 512Mbytes MAX
Part Used 1Gb 128MBytes

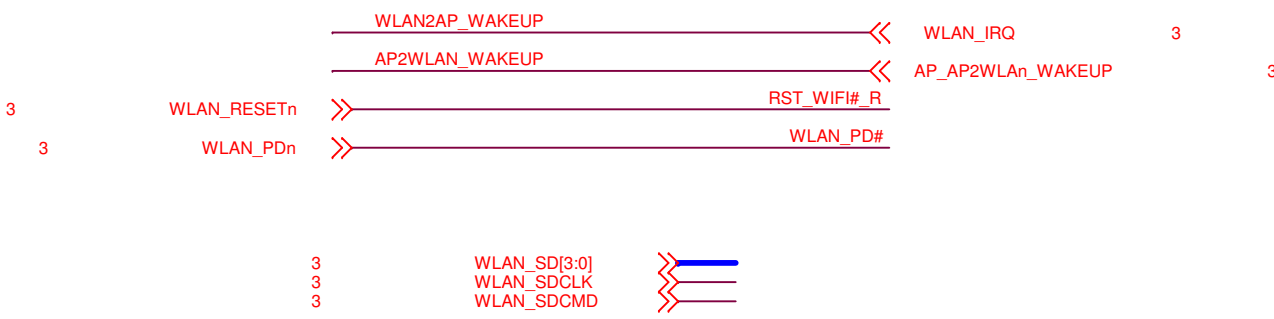
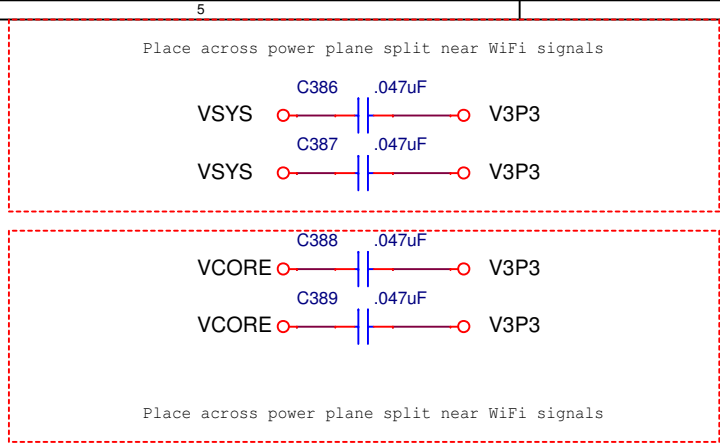


SD/MMC connector
FOR DEVELOPMENT USE



SPI NOR FLASH

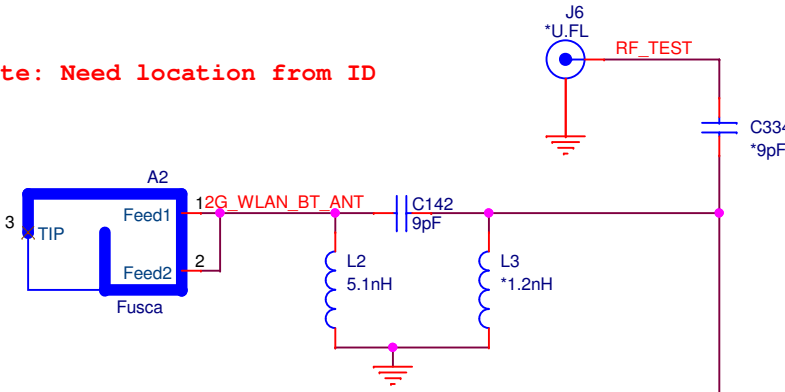




Must bu outside shield

New Antenova antenna

Note: Need location from ID

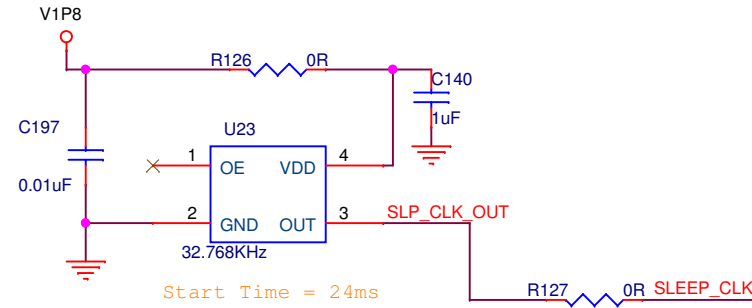


AW-NH387L 8787 WIFI

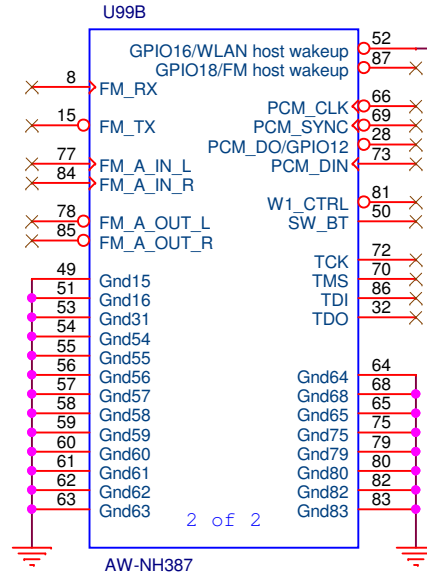
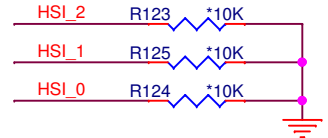
Note: Need location from ID

BT/FM Audio

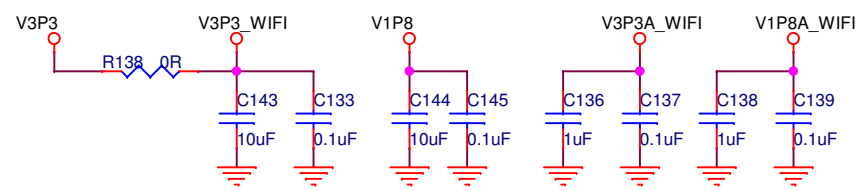
BT Ctrl

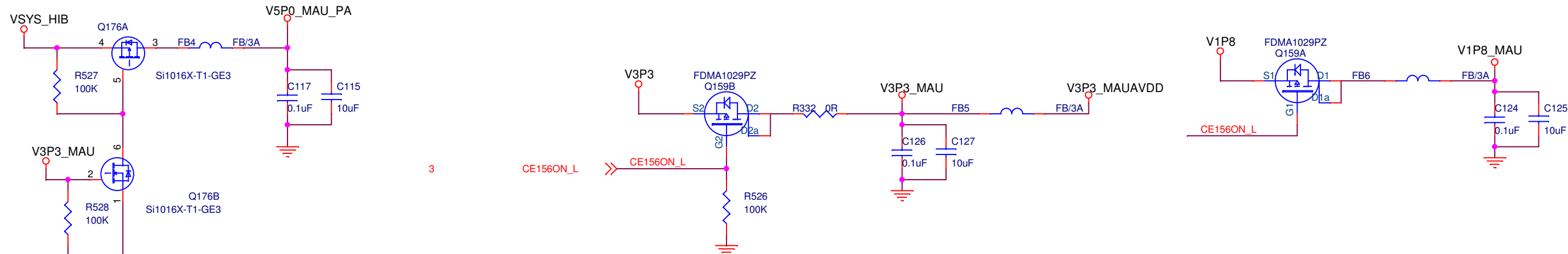


8787 Power-On Sequence:
3.3V/1.8V/SleepCLK -> RESET# High

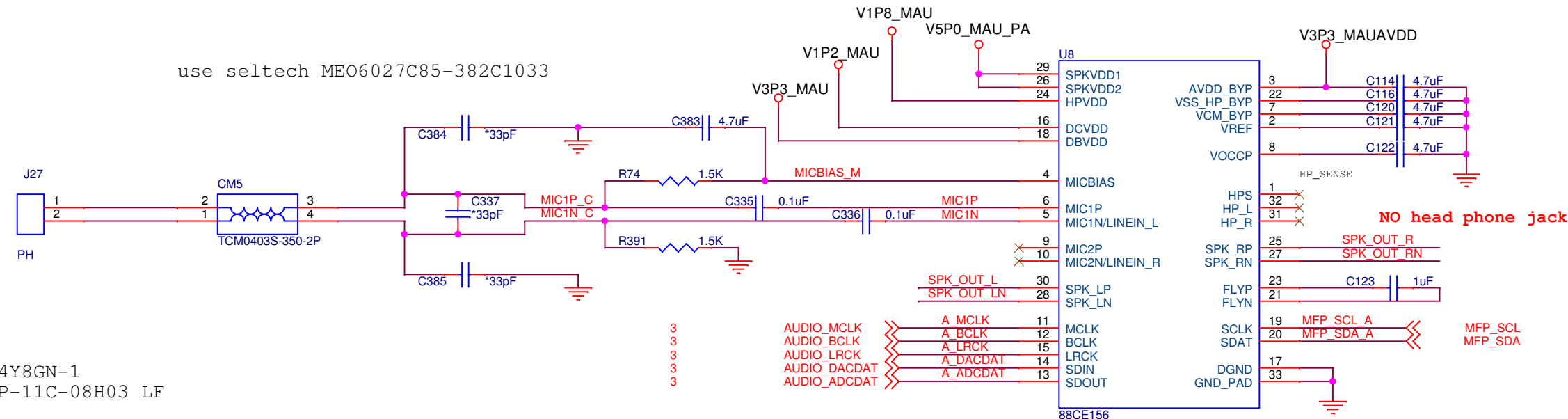


BT/FM Audio

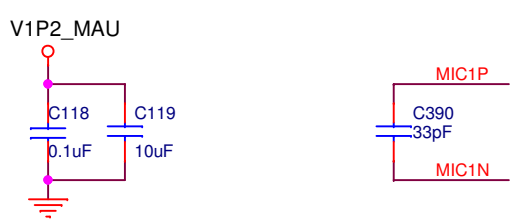
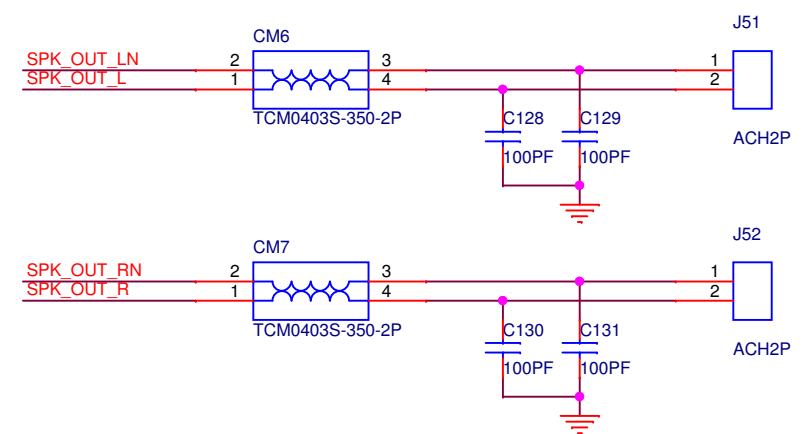




use seltech ME06027C85-382C1033

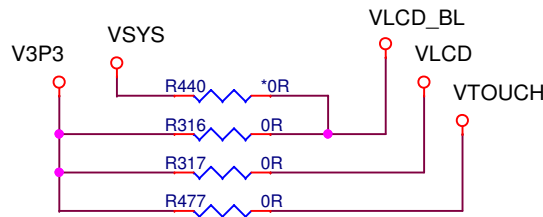


use only ONE
seltech GO2014C4Y8GN-1
bestar BMS2014P-11C-08H03 LF

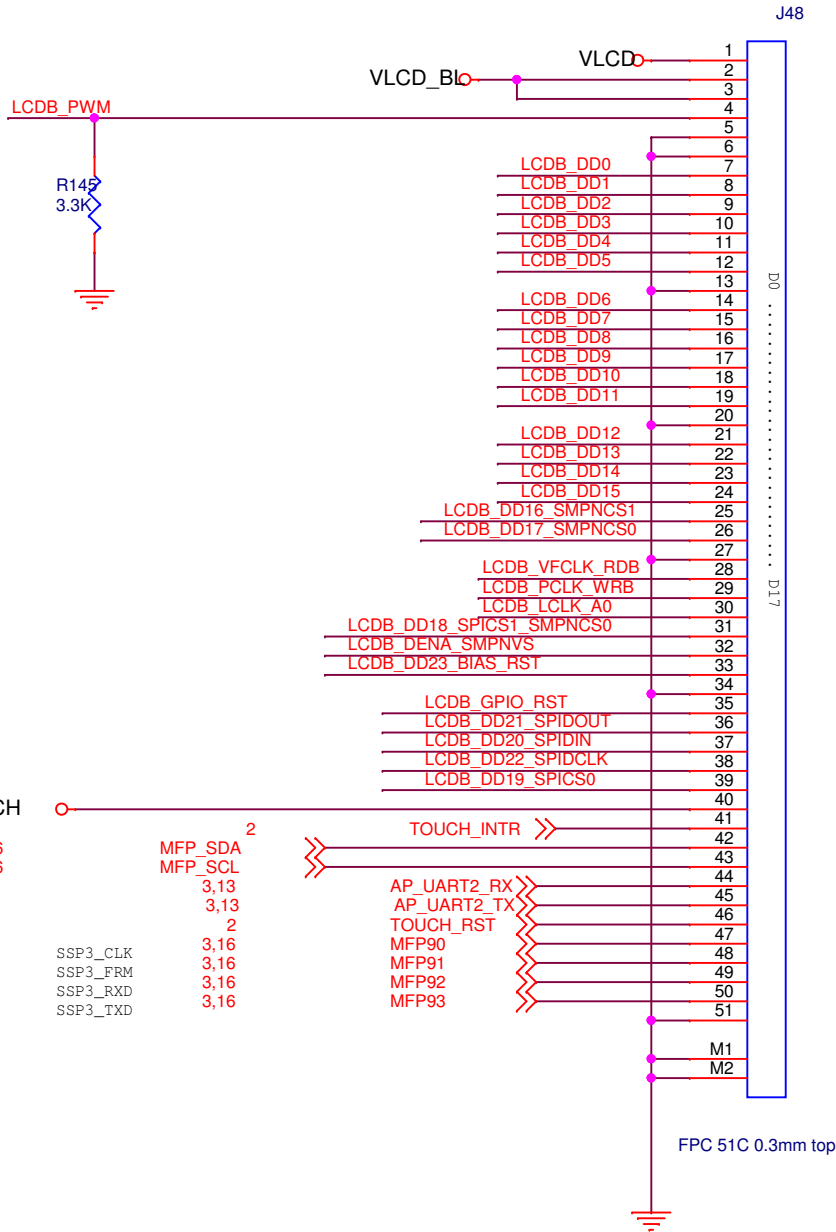
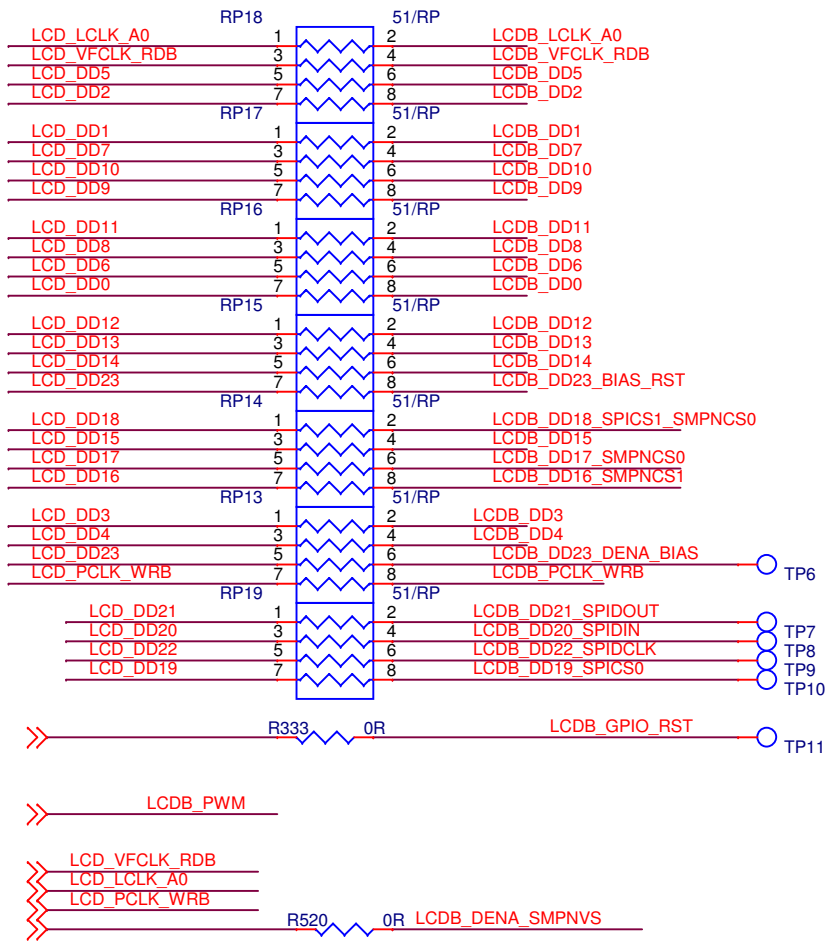


I2C linux address: 0x30

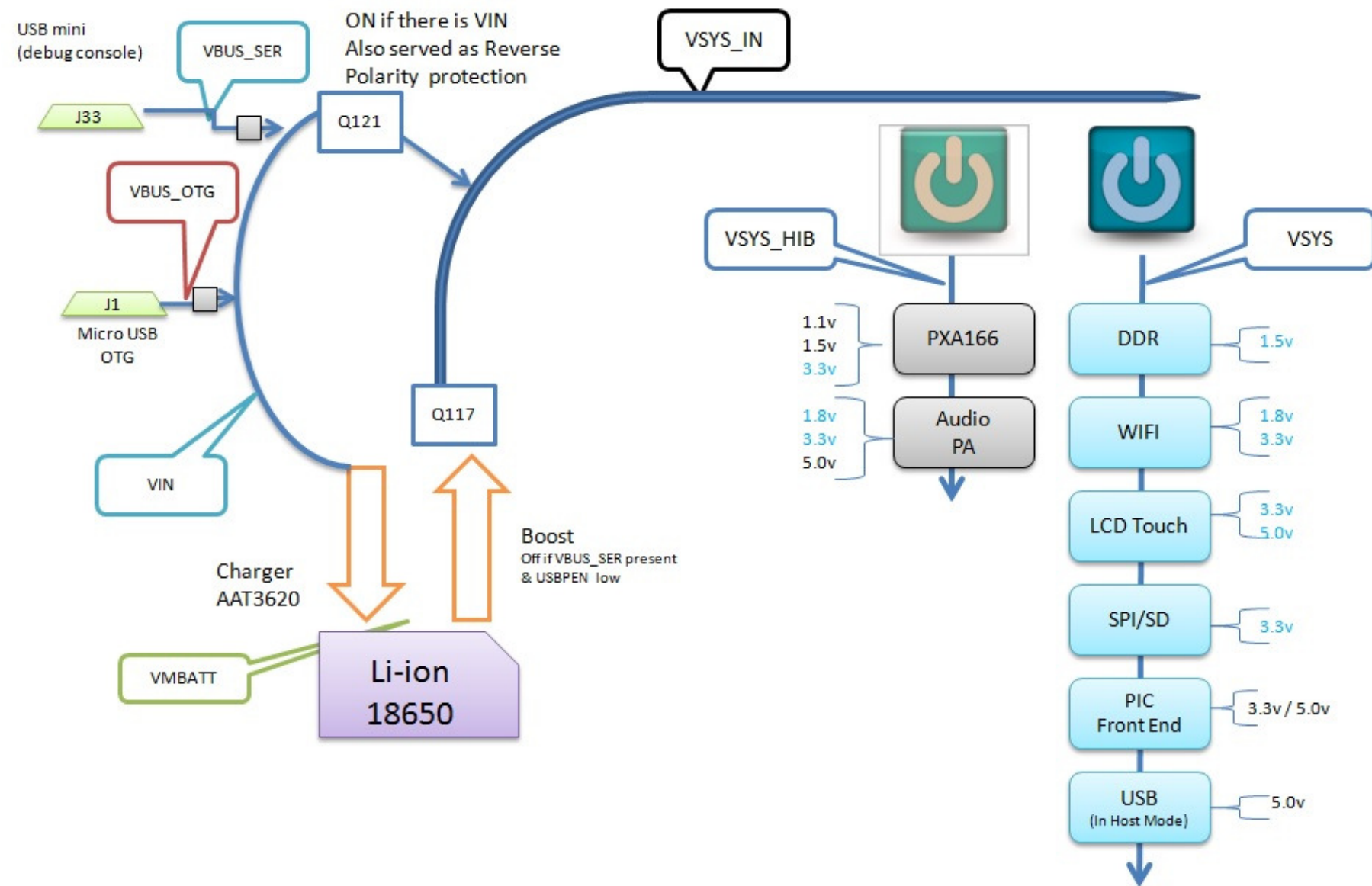
All aspen LCD + Touch signals to bridge



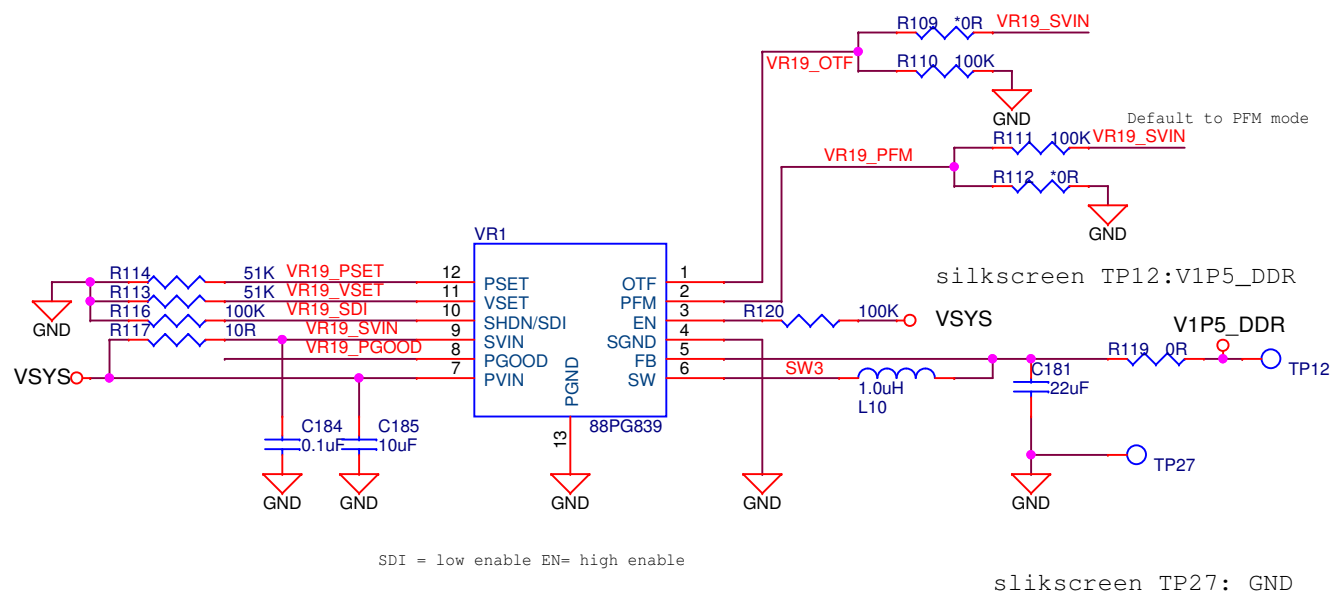
PIN SWAP OK



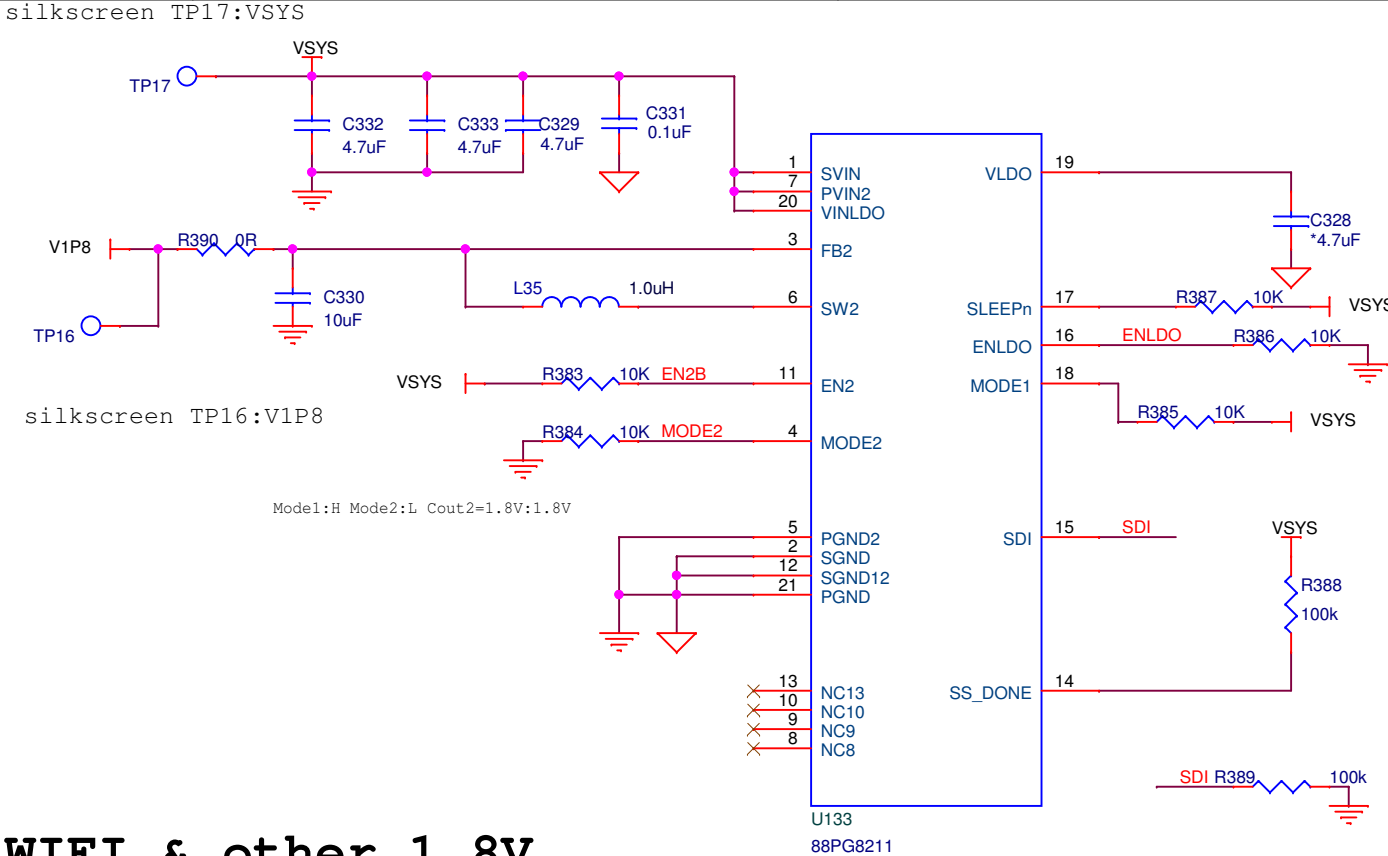
Use Molex FPC Jumper 2in 15015-0251



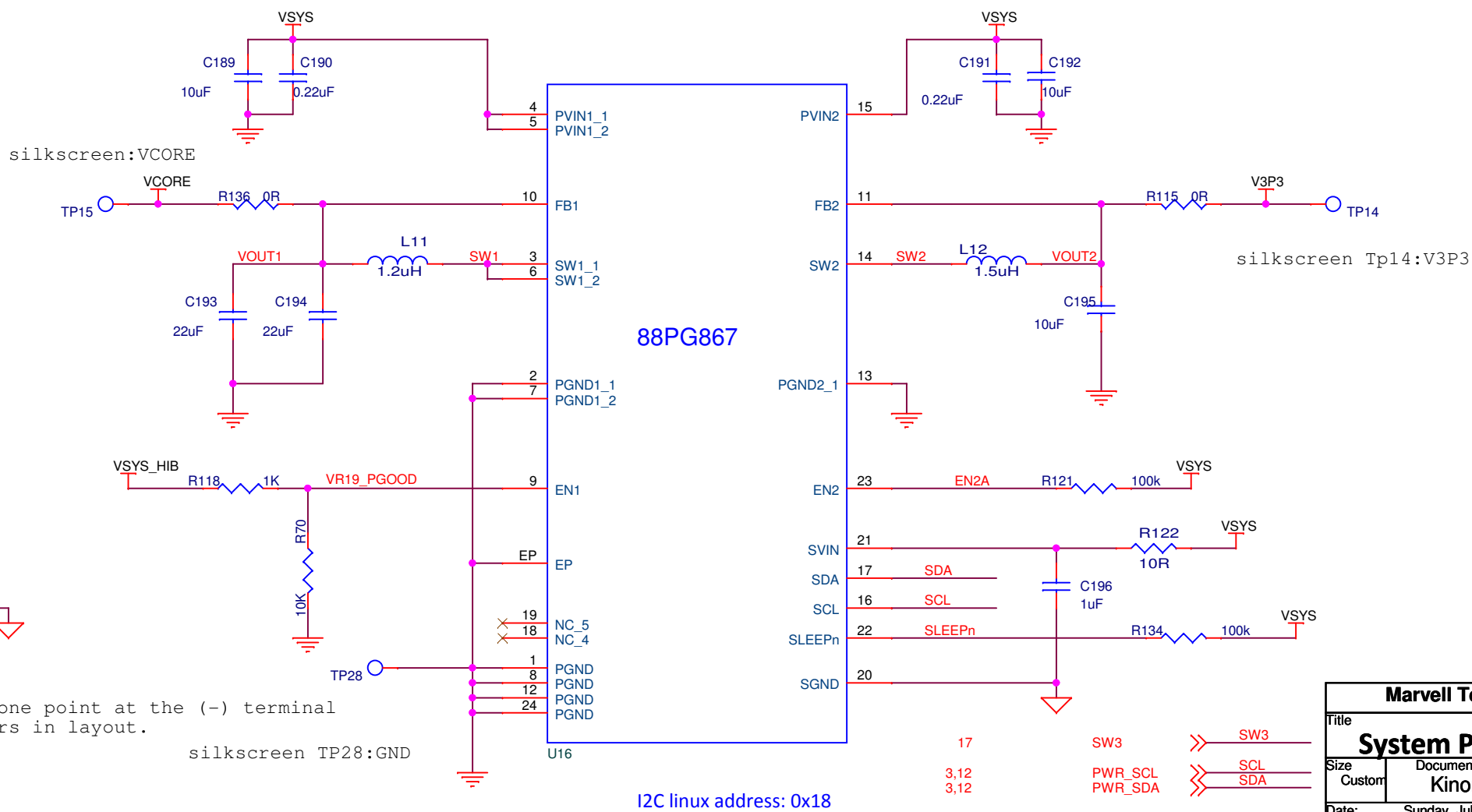
System Power supplies



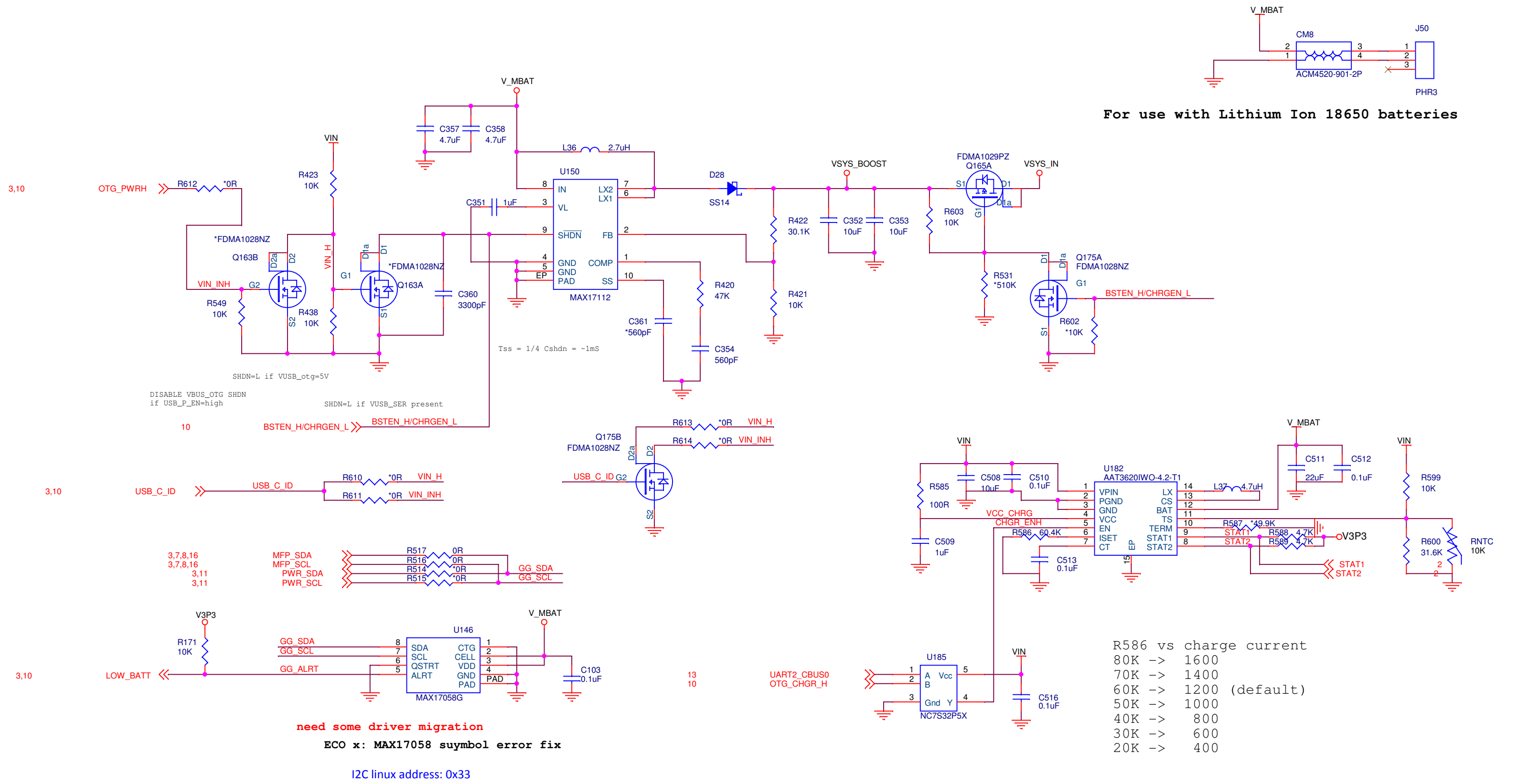
DDR3 1.5V



SYSTEM 3.3V



Battery, Charger, Gas Gauge and Boost



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

Debug and console connections

Top Section:

- UART:** AP_UART2_RX, AP_UART2_TX, AP_UART2_CBUS0, UART2_CBUS0. Connections include R196 (22R), R557 (10K), R554 (*0R), and U134 (FT234).
- USB:** USB mini B connector (J33) with pins 1 (VBUS), 2 (D-), 3 (D+), 4 (ID), 5 (GND). Connections include CM2 (DLW21H), CM4 (ACM4520-901-2P), and D29, D30 (MSE1PB-M3/89A).
- Power and Control:** V3P3U, V3P3, V3P3FTDI, VBUS_SER, VBUS_SER_CONN, GND_SER, R555 (0R), R556 (*0R), C112 (0.1uF), C326 (0.1uF), C325 (2.2uF), C381 (4.7uF), R253 (4.7K), V3P3U, C391 (0.1uF), C110 (0.1uF), R558 (*10K).

Bottom Section:

- JTAG (inside only):** AP_PRI_TDO, LED13 (*Green), R270 (*2.2K), V3P3.
- ECO 2: Disconnected GND:** RST_AP#, SW5 (FSM2JSMA).
- ECO 3: Footprint odd-even swap:** J7 (2x8-0.1in-SMD), V3P3, V3P3, V_REF, TRST#, TDI, TMS, TCK, RTCK, TDO, SRST#, V_SUP, GND, GND, GND, GND, GND, GND, GND, GND.
- ECO : reduced cap size for faster rst_ap# Trise:** AP_PRI_TDO, RST_AP#, C339 (0.1uF).

Legend:

- 3,8
- 3,8
- 2
- 12
- match K1/K3/K4
- VBUS_SER
- VBUS_SER_CONN
- GND_SER
- VBUS_SER_CONN
- VBUS
- TAB
- T6
- T5
- T4
- T3
- GND
- J33
- GND_SER
- CM2
- DLW21H
- CON_USBDM
- CON_USBDP
- GND_SER
- D30
- MSE1PB-M3/89A
- D29
- MSE1PB-M3/89A
- GND_SER
- RST_AP#
- SW5
- FSM2JSMA
- ECO 2: Disconnected GND
- ECO 3: Footprint odd-even swap
- J7
- V_REF
- TRST#
- TDI
- TMS
- TCK
- RTCK
- TDO
- SRST#
- V_SUP
- GND
- GND
- GND
- GND
- GND
- GND
- GND
- GND
- 2x8-0.1in-SMD
- ECO : reduced cap size for faster rst_ap# Trise
- AP_PRI_TDO
- RST_AP#
- C339
- 0.1uF

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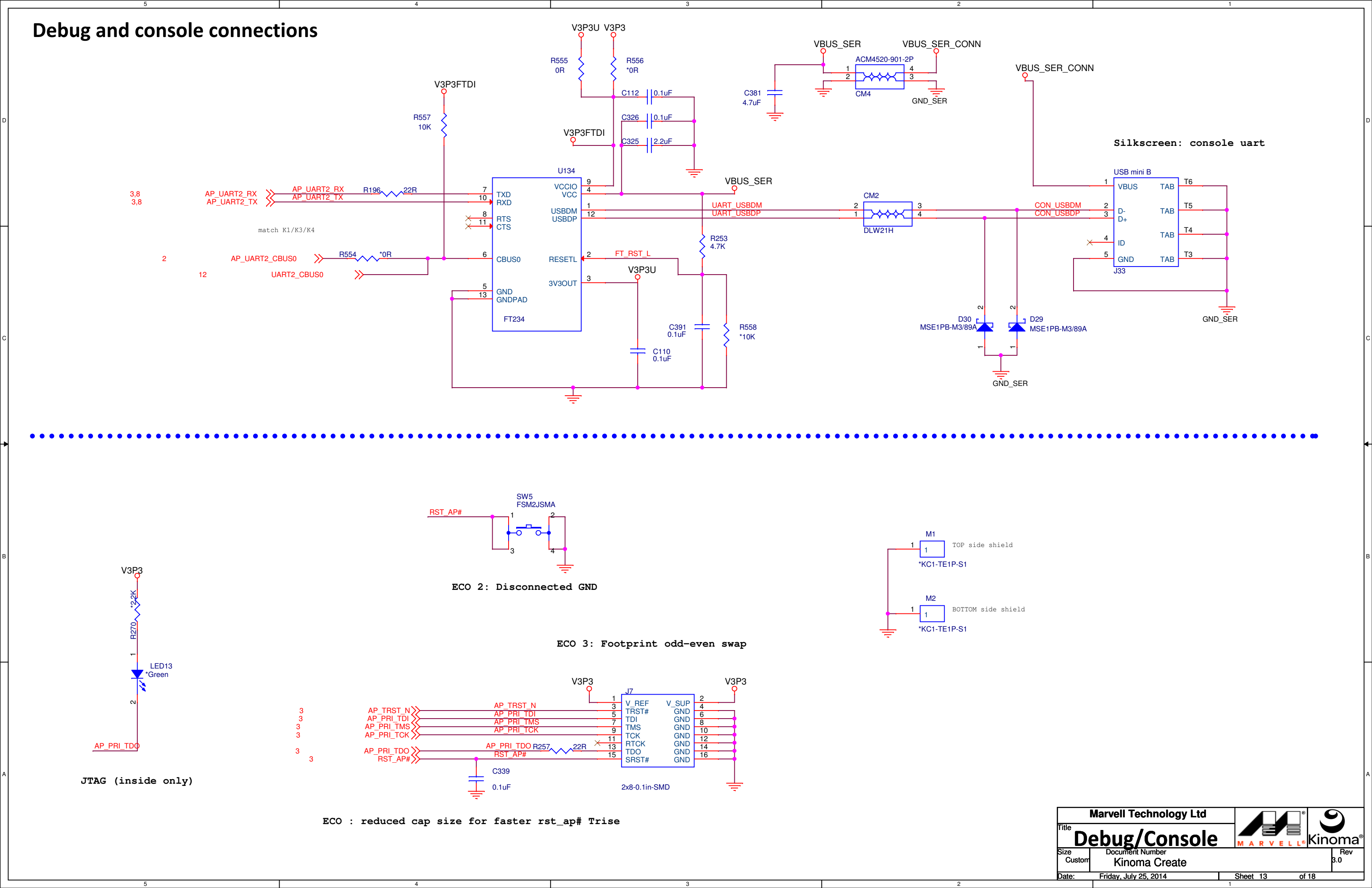
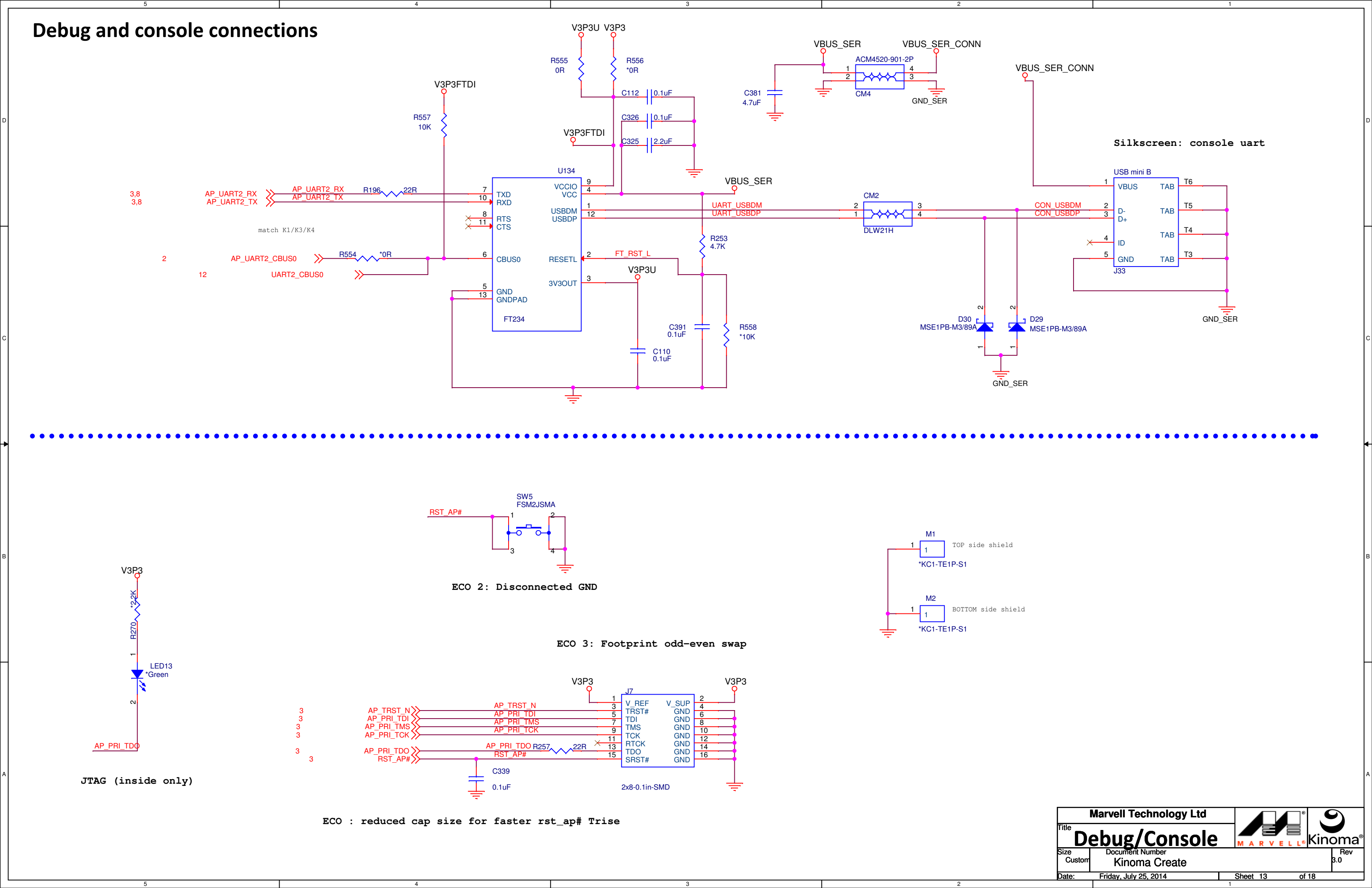
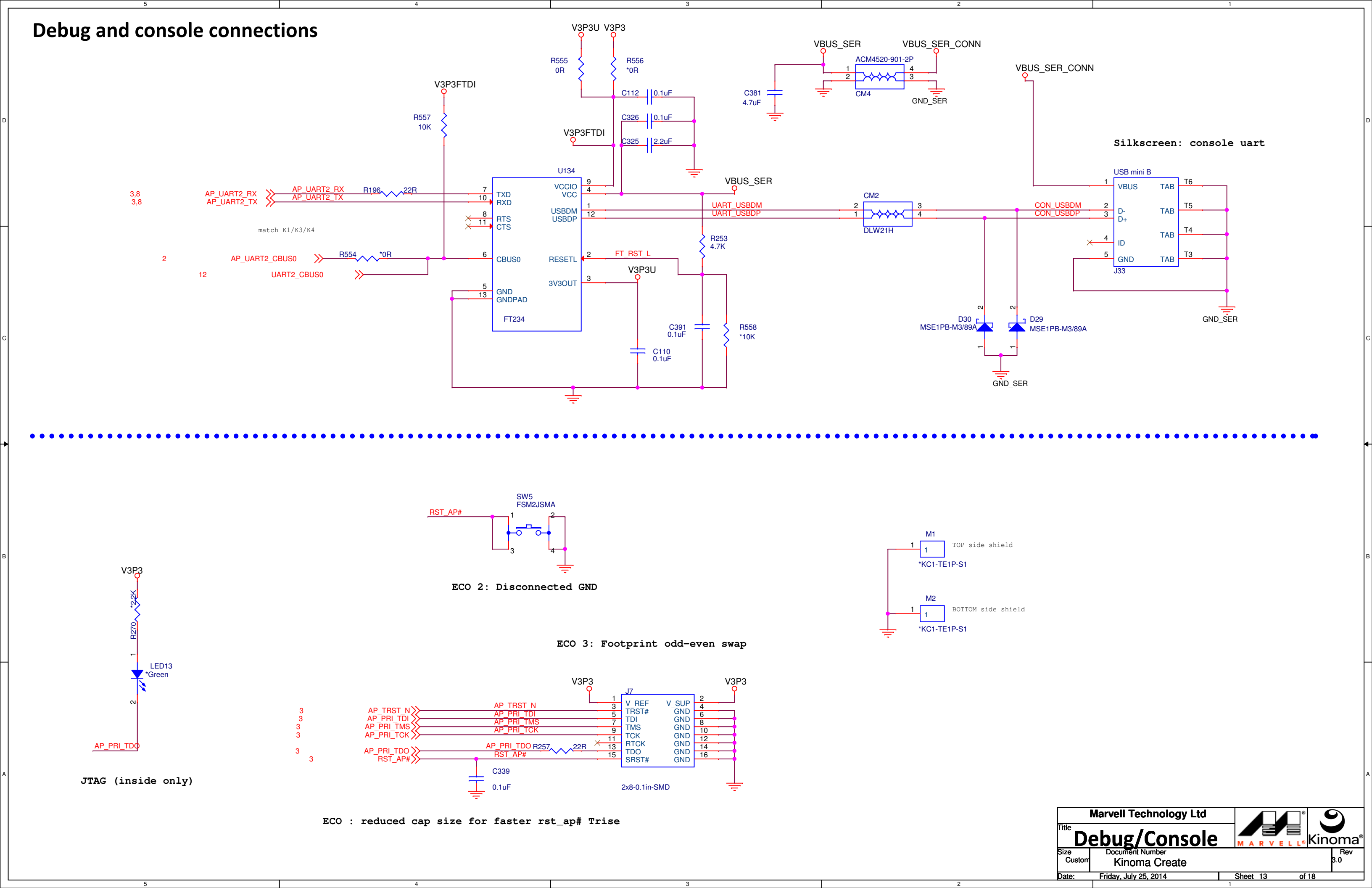
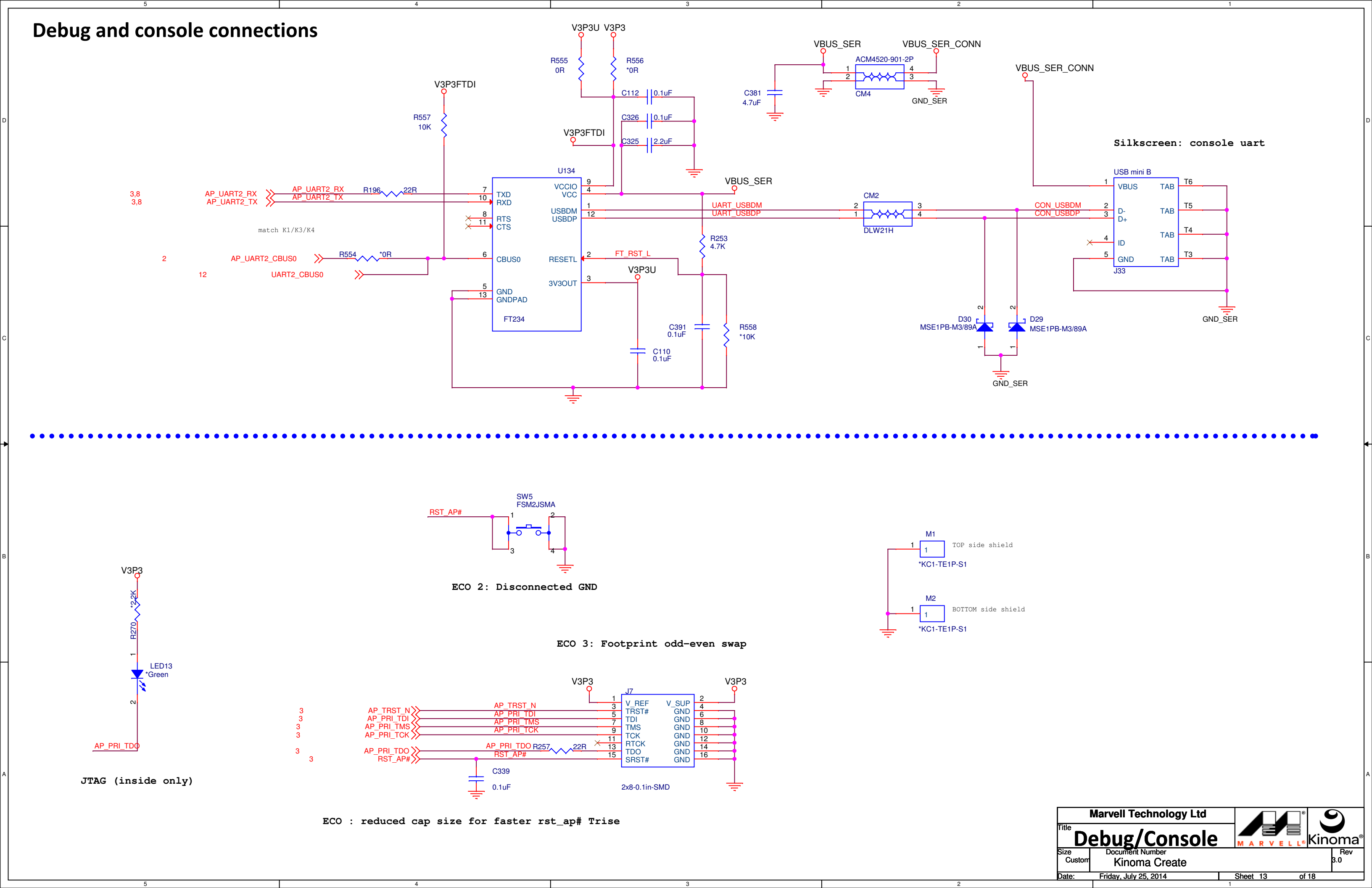
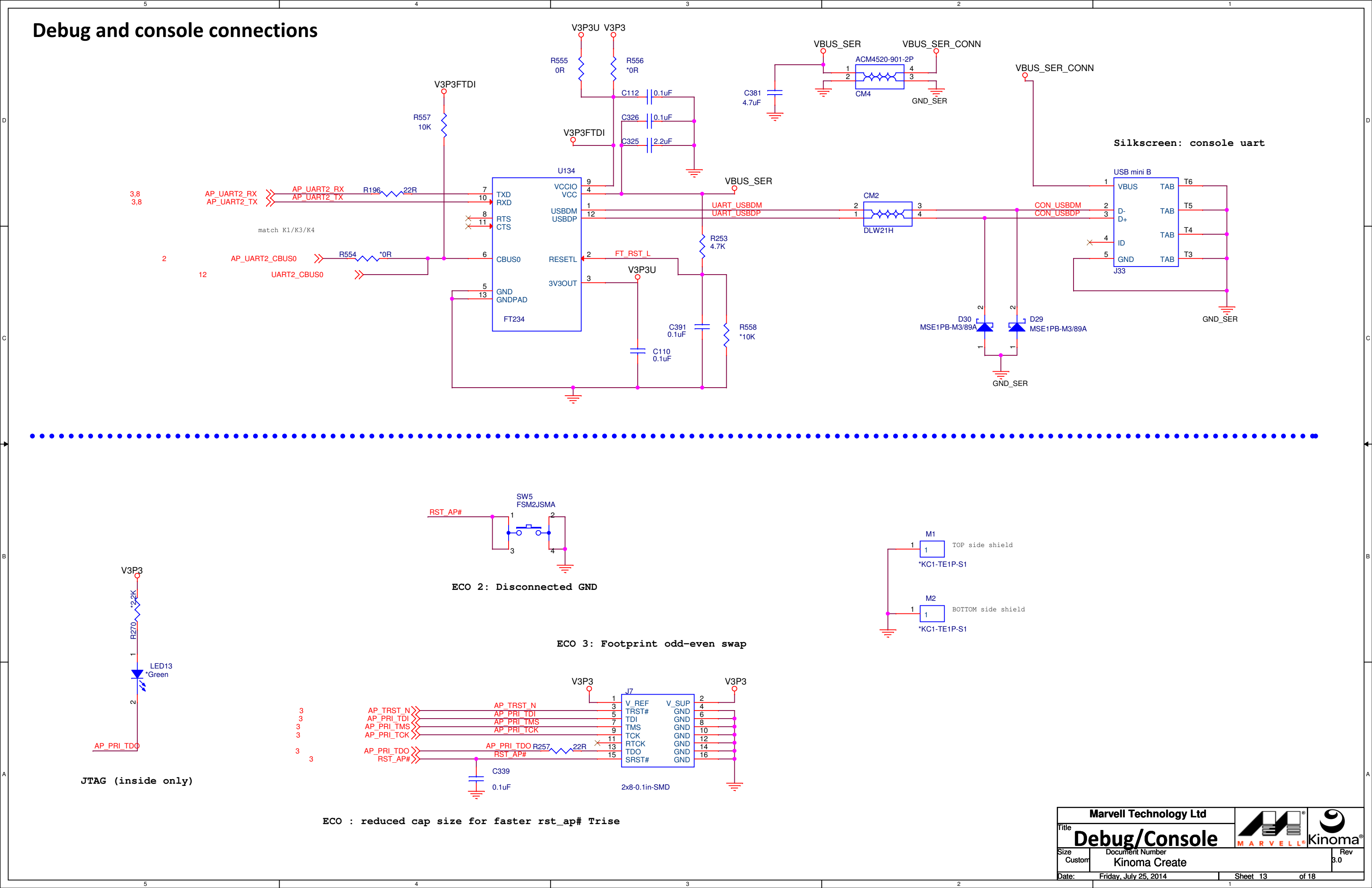
Debug/Console

Kinoma Create

Rev 3.0

Date: Friday, July 25, 2014

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Debug and console connections

Top Section:

- UART:** AP_UART2_RX, AP_UART2_TX, AP_UART2_CBUS0, UART2_CBUS0. Connections to FT234RL (U134) pins 7, 10, 8, 11, 6, 5, 13.
- USB:** USB mini B connector (J33) with pins 1 (VBUS), 2 (D-), 3 (D+), 4 (ID), 5 (GND). Connections to FT234RL (U134) pins 1, 12, 2, 3.
- Power:** V3P3U, V3P3, V3P3FTDI, V3P3OUT, V3P3TDO, V3P3TCK, V3P3TMS, V3P3TDI, V3P3TRST_N, V3P3TRST#. Connections to various pins and components like R555, R556, R557, R554, R558, R253, C391, C110, C326, C325, C381, C112.
- Control:** FT_RST_L, RST_AP#, AP_PRI_TDO, AP_PRI_TCK, AP_PRI_TMS, AP_PRI_TDI, AP_PRI_TRST_N.

Bottom Section:

- JTAG (inside only):** AP_PRI_TDO, AP_PRI_TCK, AP_PRI_TMS, AP_PRI_TDI, AP_PRI_TRST_N, AP_PRI_TRST#. Connections to J7 connector pins 1, 3, 5, 7, 9, 11, 13, 15.
- RST:** RST_AP#, RST_AP#. Connections to SW5 (FSM2JSMA) and J7 connector pins 1, 3, 5, 7, 9, 11, 13, 15.
- J7 Connector:** 2x8-0.1in-SMD connector with pins 1-16. Connections to V3P3, V3P3TDO, V3P3TCK, V3P3TMS, V3P3TDI, V3P3TRST_N, V3P3TRST#.

ECO 2: Disconnected GND

ECO 3: Footprint odd-even swap

ECO : reduced cap size for faster rst_ap# Trise

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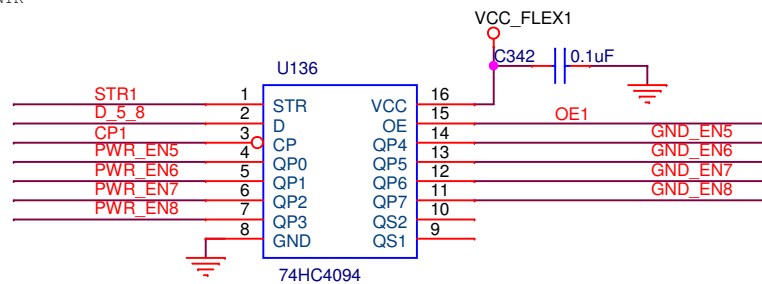
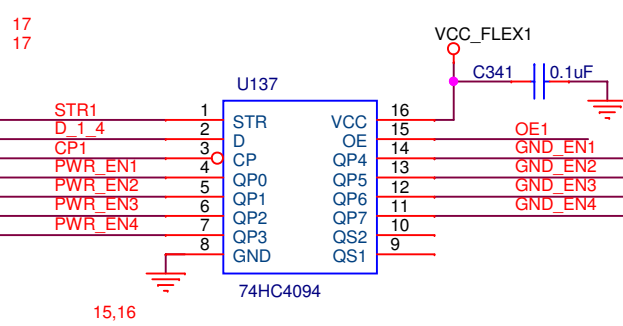
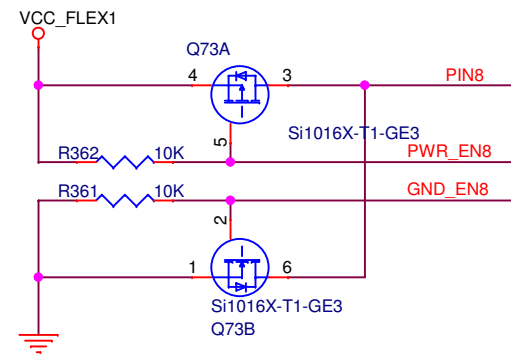
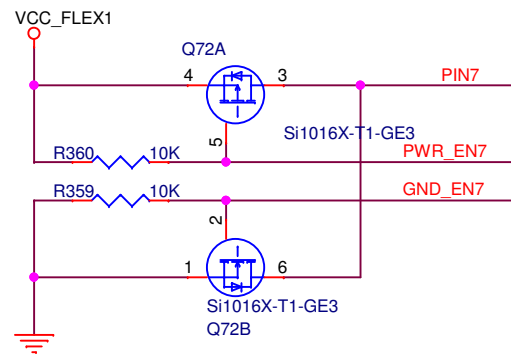
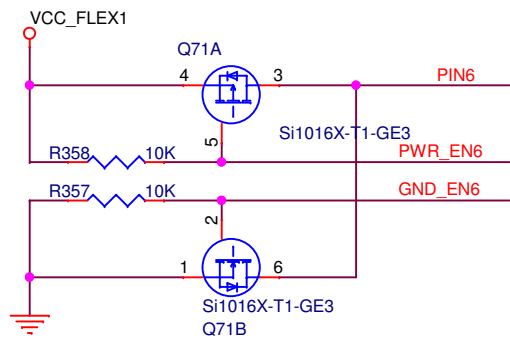
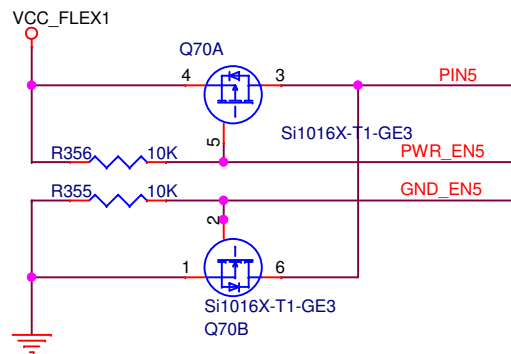
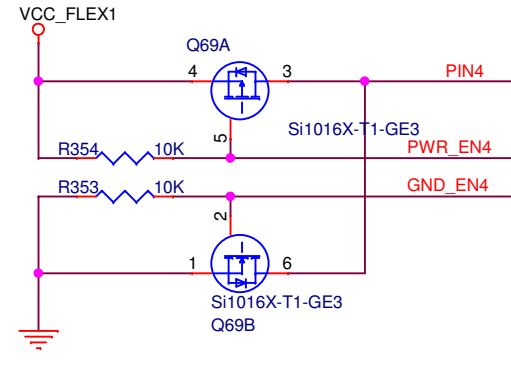
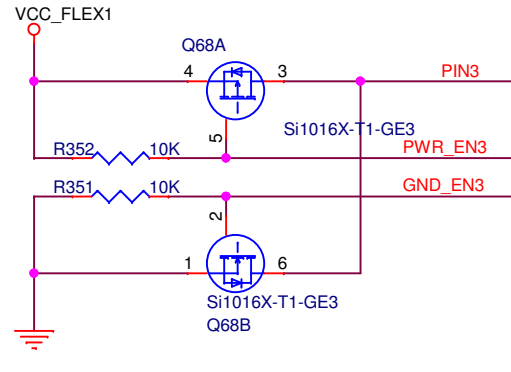
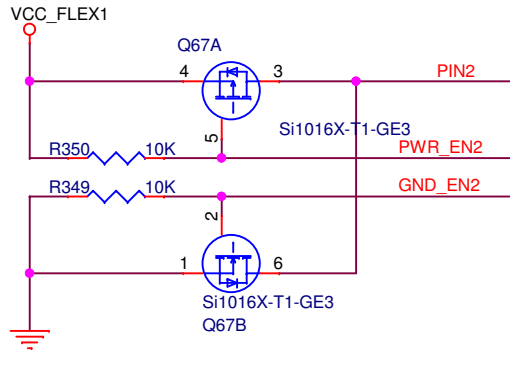
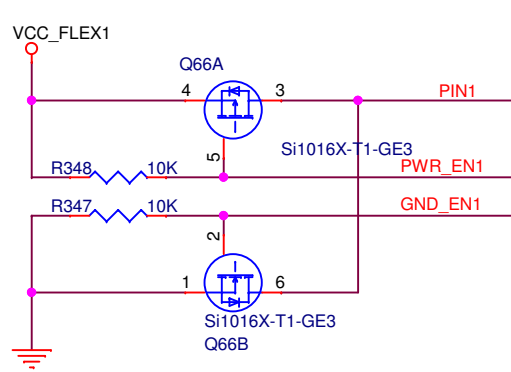
Debug/Console

Kinoma Create

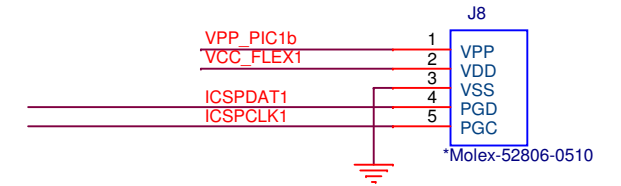
Rev 3.0

Date: Friday, July 25, 2014

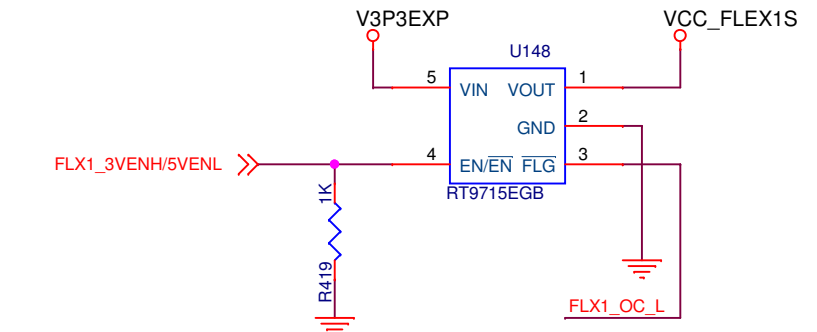
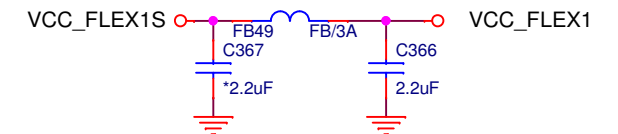
Sheet 13 of 18



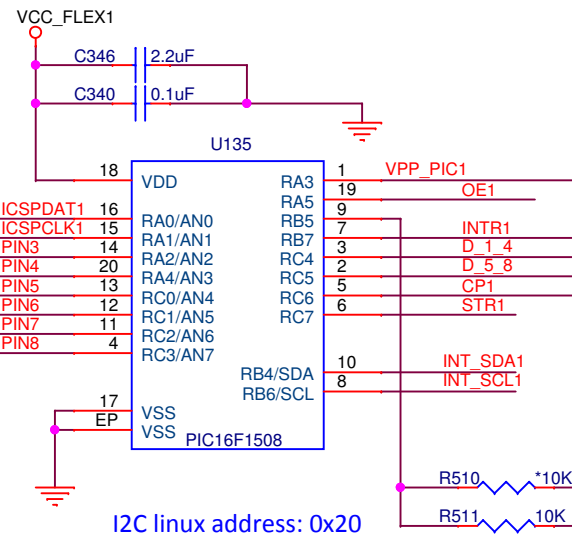
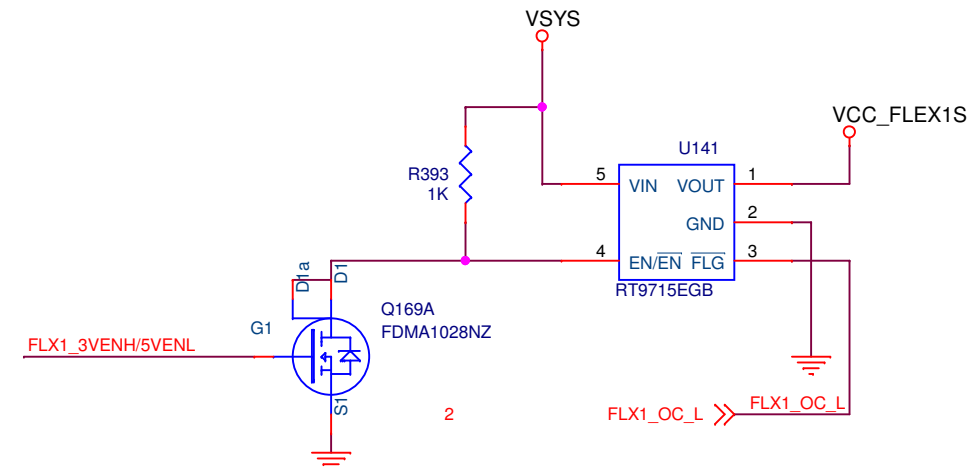
USE FFC 21039-0732 @mouser



Place close to pin wide trace for V5P0FEXT

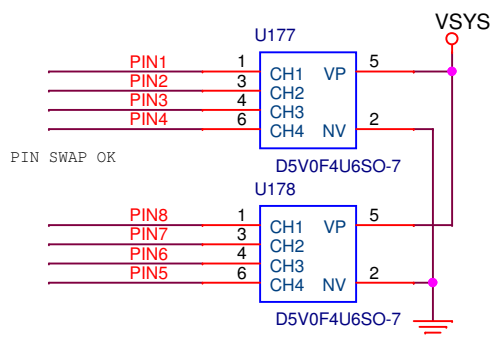


ECO 4: 5V feed to PIC



I2C linux address: 0x20

Note: Need location from ID



RB5 = Connector ID

15,16

INT_SDA3

INT_SDA1

INT_SCL1

INT_SCL3

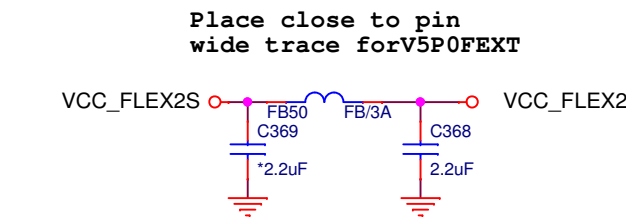
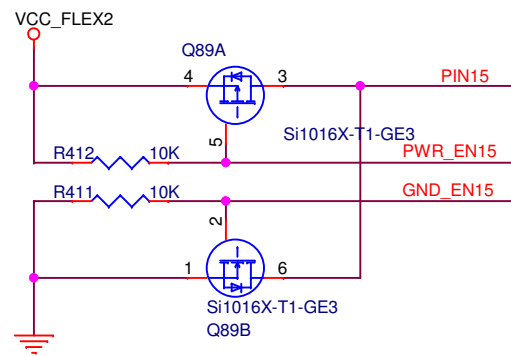
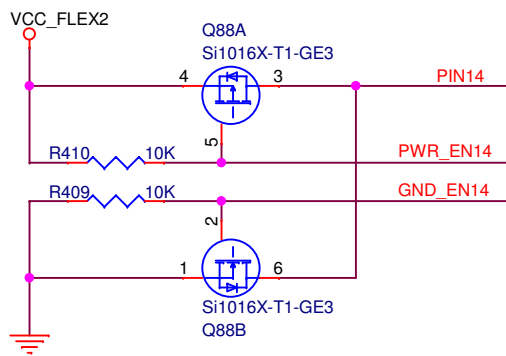
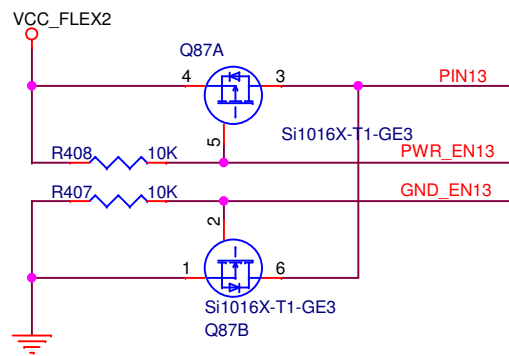
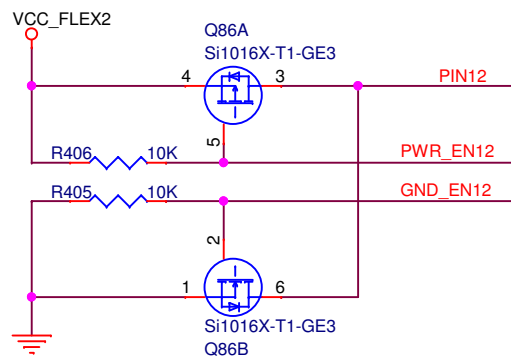
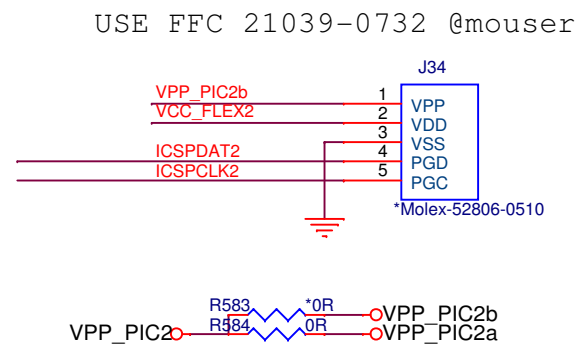
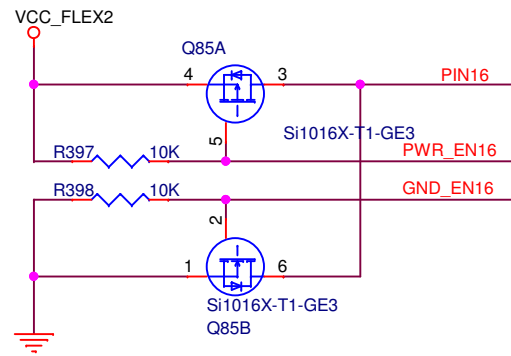
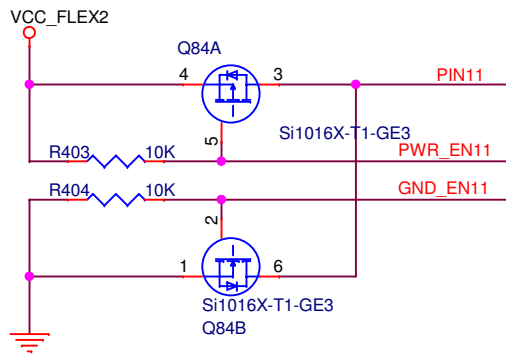
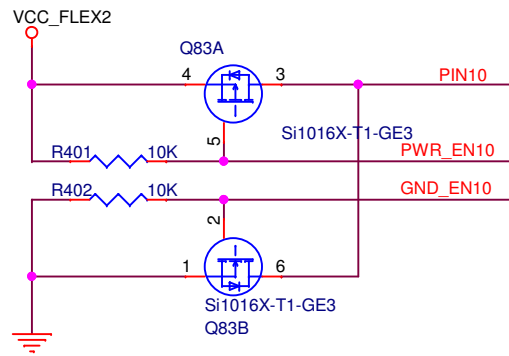
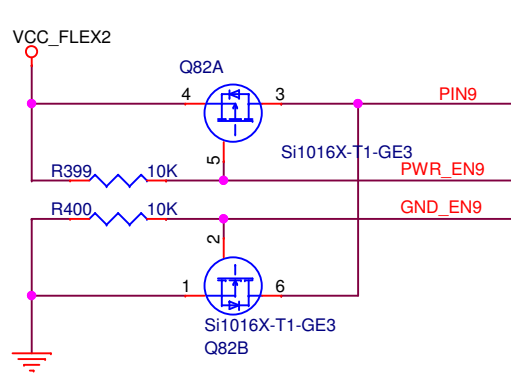
Drive OE low during programming

INT_SDA3

INT_SDA1

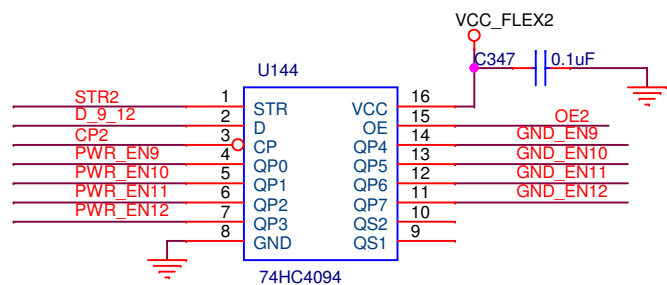
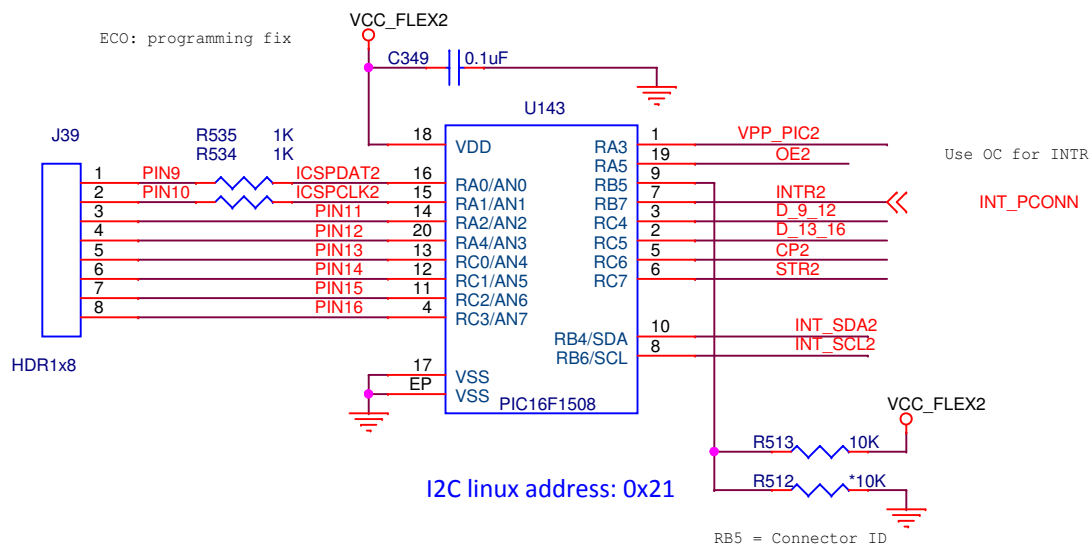
INT_SCL1

INT_SCL3

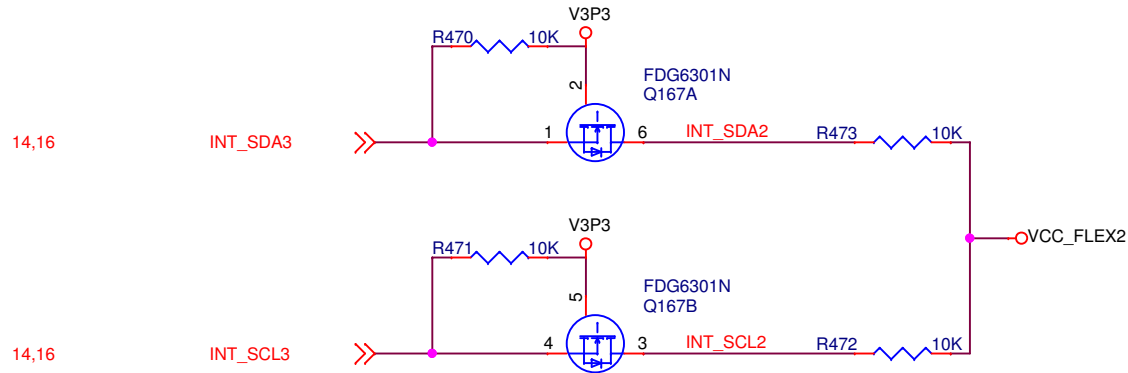
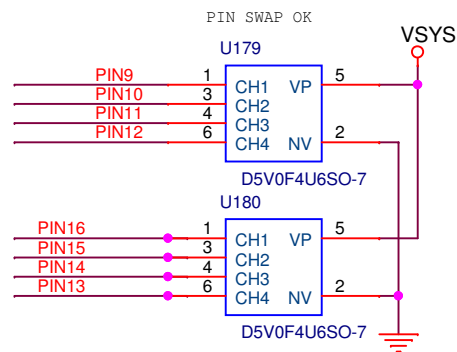
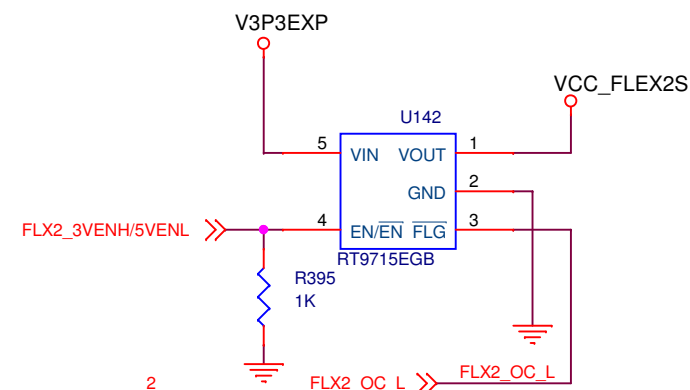
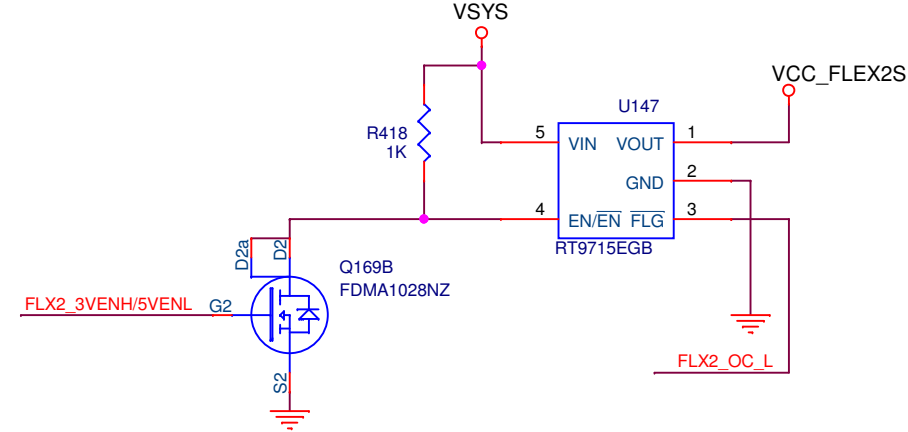
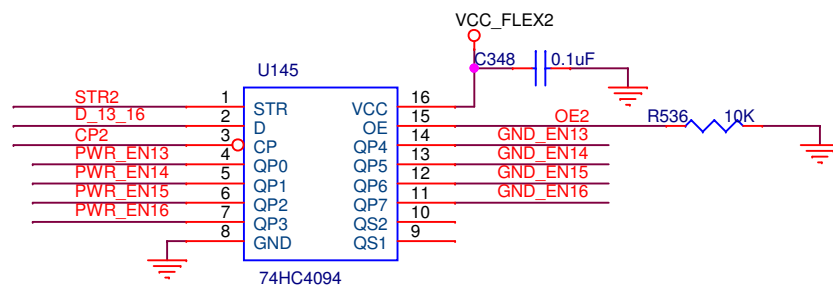


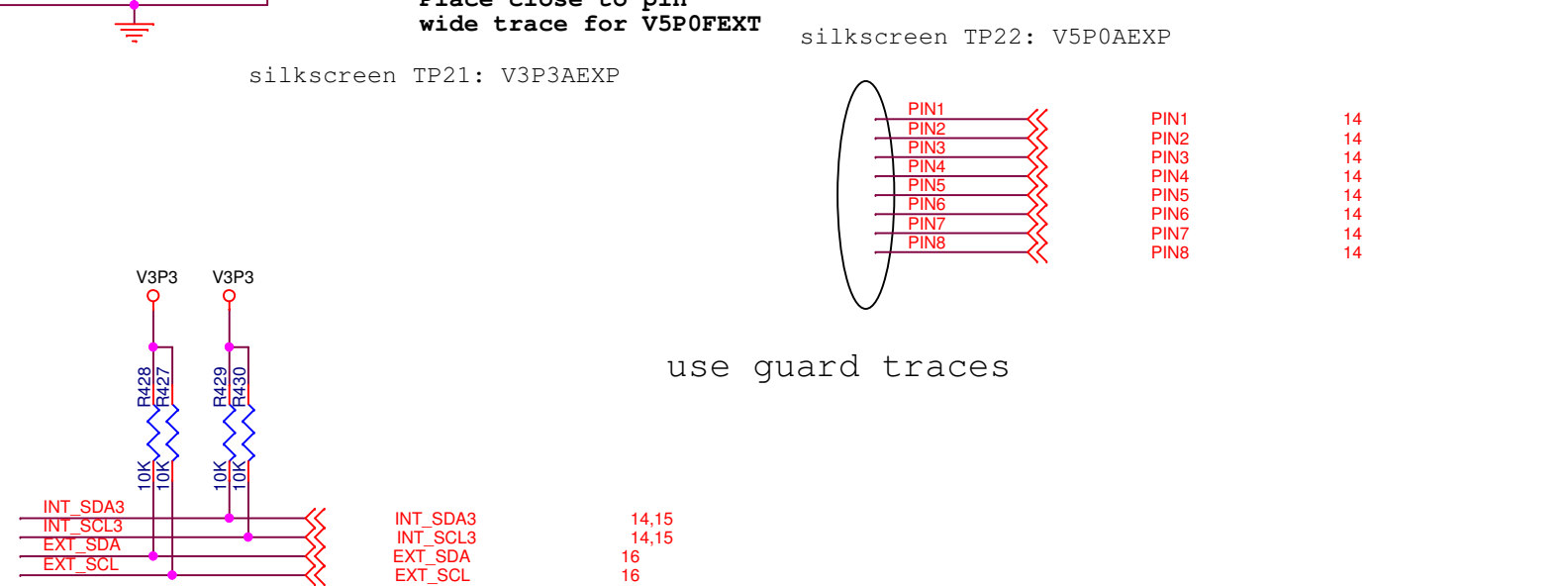
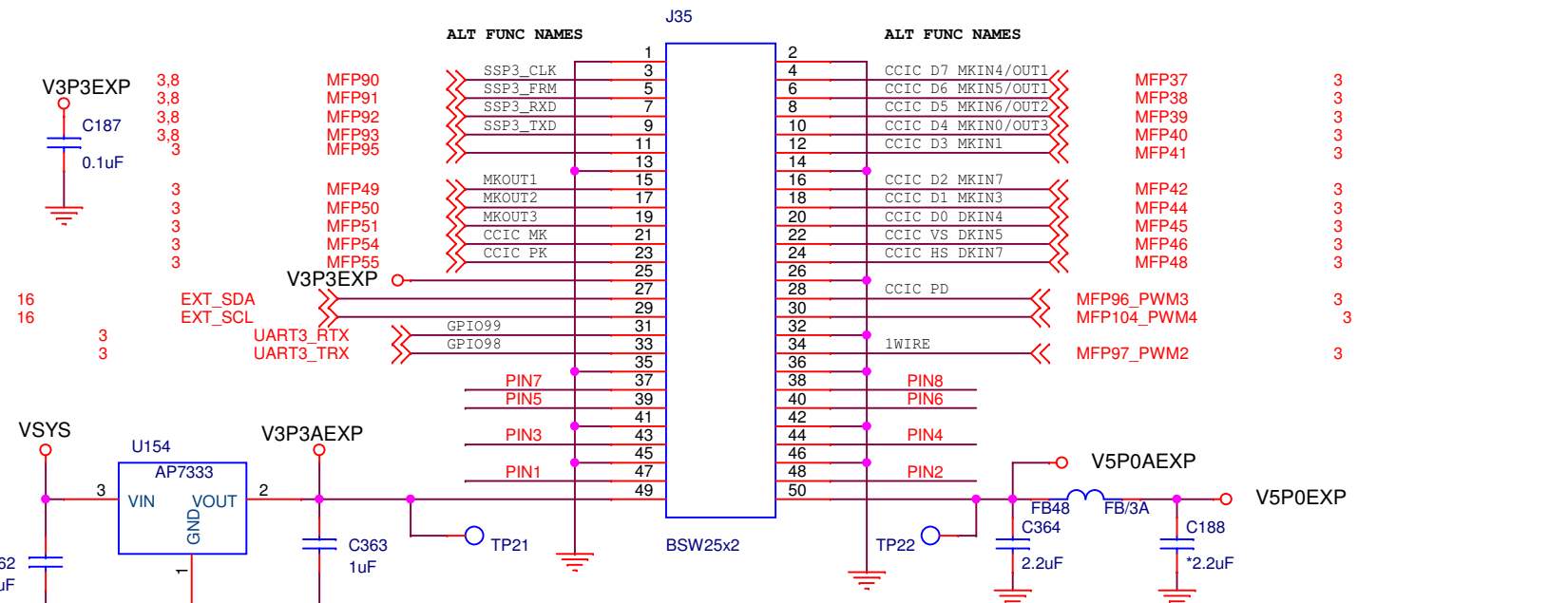
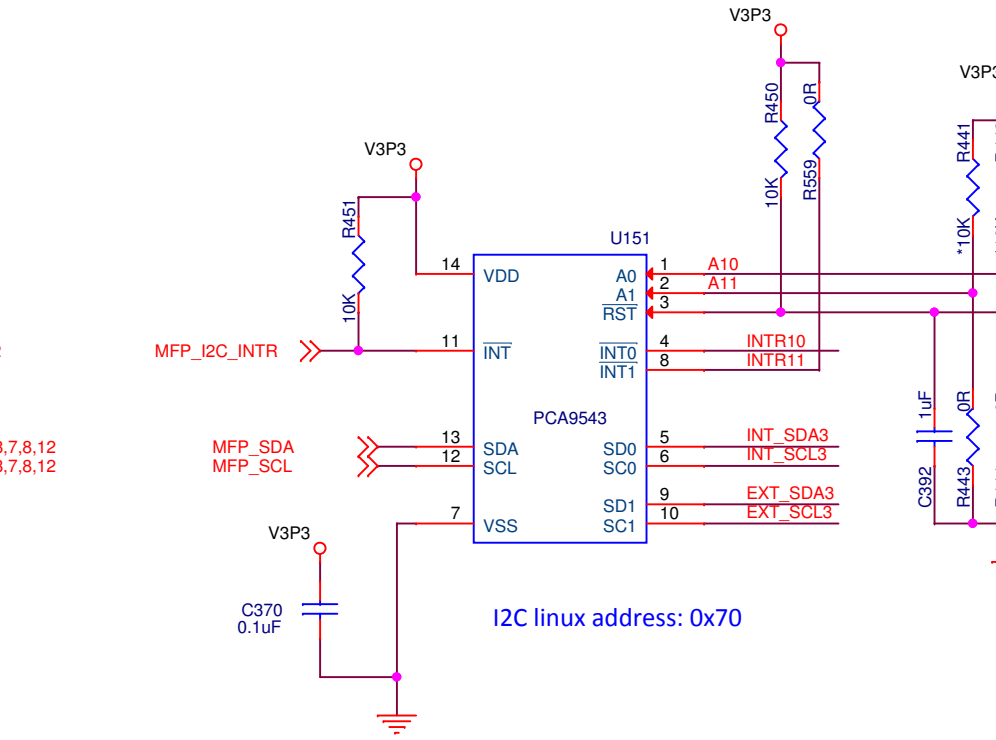
ICSPDAT2
ICSPCLK2

ECO: programming fix

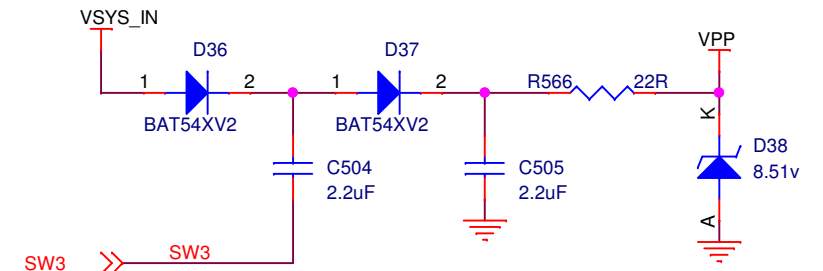
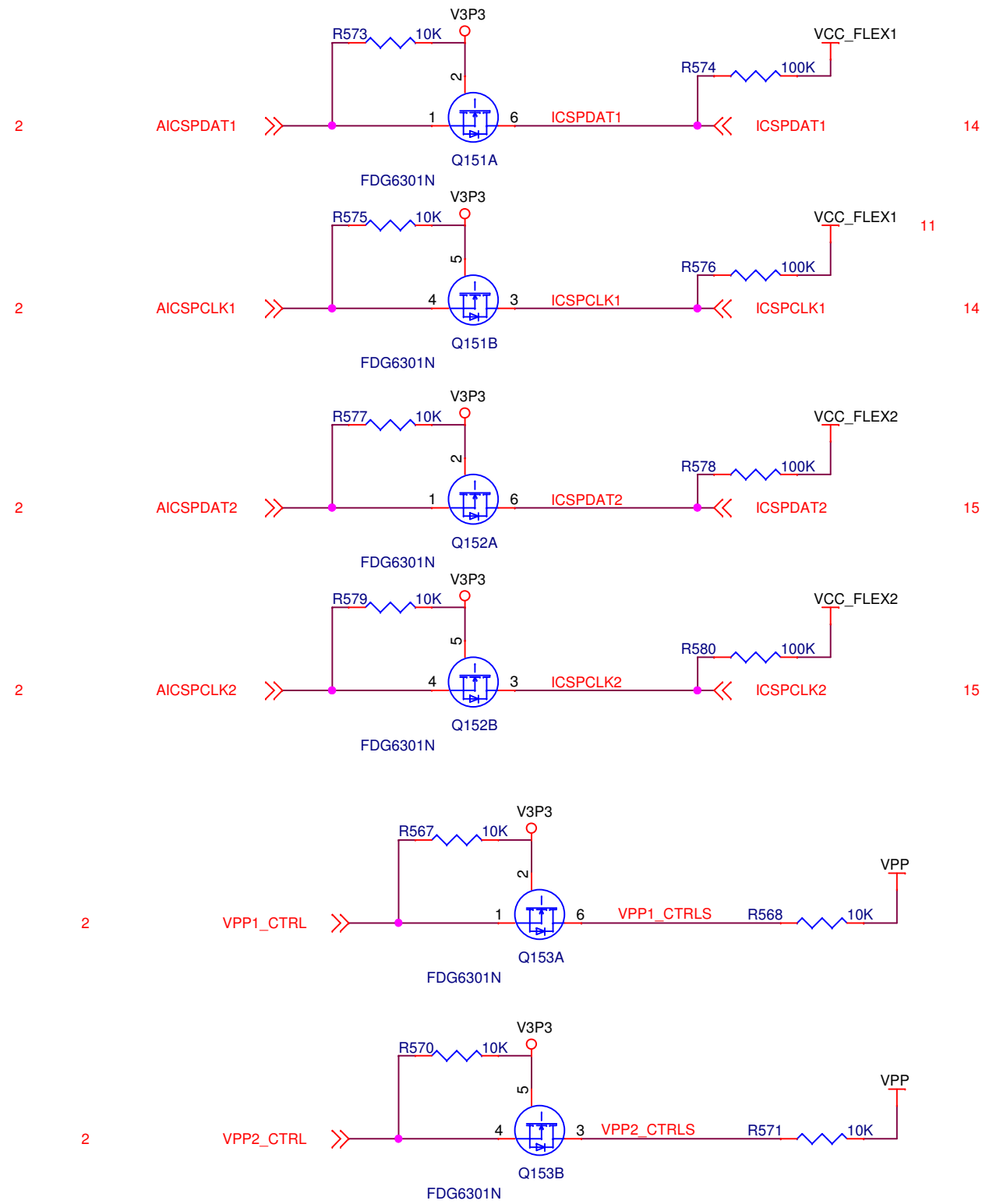


Any case, VCC=5V signal3.3V

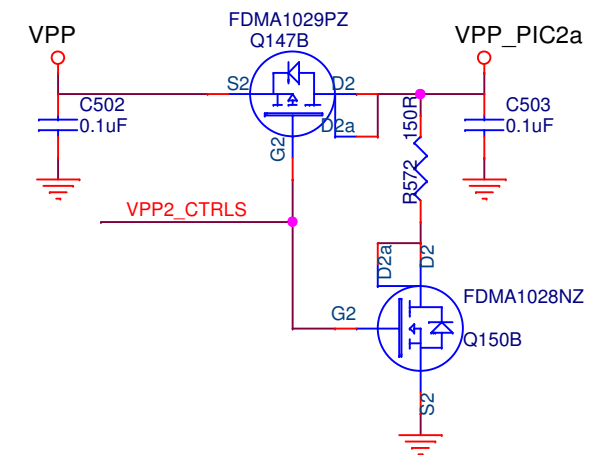
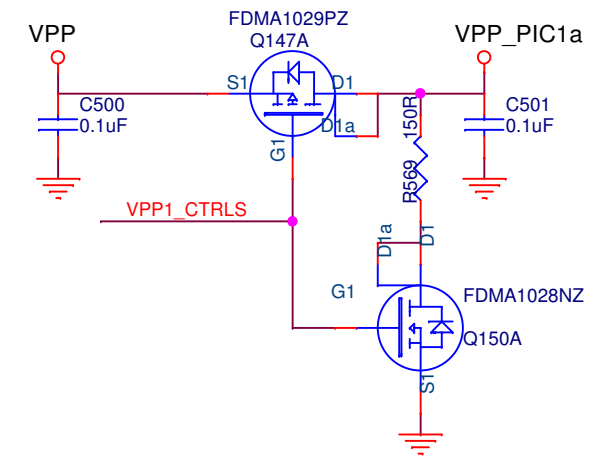




Revised 50 pin, tied to top 8 pins



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 spped up charging
 - added cutout switch to boost supply to avoid leak
- P17: PIC programmer VPP supply and signals