



SMALL EMERGE COMMON USER INTERFACE

Changelog:

SCH Q26038-001 REV A :
Based off Q26034-003 Design.
PCB Q25086-001

SCH Q26038-001 REV B :
PCB Q25086-002

CHANGE HARDWARE REV BITS TO 0001.
CHANGE LCD CONNECTOR TO OMRON.
SWAP SPI0_MISO AND SPI0_MOSI.
DELETE CLK RESISTOR ON SD CARD SLOT.
CHANGE CONNECTOR REFERENCE DESIGNATORS TO MATCH T600 INTEGRATED TELEMETRY BOARD.
SWAP RXD AND TXD ON DEBUG SERIAL CONNECTOR, OMIT 3.3V CONNECTION THERE.
FIX NAME SWAP SPI1_CS0 AND SPI1_CS1.
CHANGE TELEMETRY CONNECTOR PIN 13 TO WIFI SOFTWARE RESET.
CHANGE LCD SIGNAL RESISTOR PACKS TO DISCRETE 0402'S.
DELETE OPTION FOR SDIO WIFI INTERFACE.
ADD RTC_nINT TO A GPIO0 PIN FREED UP FROM SDIO WIFI INTERFACE.
ADD A/D INPUTS FROM SHUNT AMP ON TELEM BD.
CHANGED PULLUP RESISTOR ON 32768HZ CLOCK TO 10K.
ADDED DIGITAL MONITORING OF KEYSWITCH AND CHARGER POWER AND SYSTEM_UP.
MOVED SPARE_RADIO POWER SIGNAL.
CHANGED LSD DIODES TO ES1 TO LOWER COST.
CHANGED C193 FROM 470 TO 1500uF.
CHANGED R6 BACK TO 10K.

SCH Q26038-001 REV C :
PCB Q25086-003

CHANGE HARDWARE REV BITS TO 002
DELETE R159 SERIES RESISTOR ON A15.
ADD C343-C346 ON KEYPAD INPUTS FOR NOISE SUPPRESSION.
REMOVE FRAM OPTION. ADD INFINEON TPM IC.
ADD D30-D32 IN POWER FAIL CKTS.

SCH Q26038-001 REV D :
PCB Q25086-004 / Q25086-005

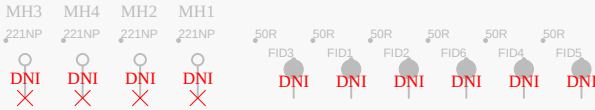
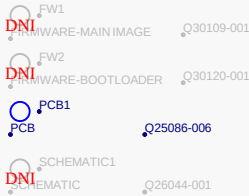
Replace membrane connectors with 1mm pitch 22 ckt ZIF connectors
Add 237 ohm 0402 resistors to the membrane page
Update REV bits

SCH Q26038-001 REV E :
PCB Q25086-006

Add B2
Add R287

SCH Q26038-001 REV F :
Depop B1 and R130
Populate B2 and R287

PART NUMBERS FOR REFERENCE ONLY:
PRINTED CIRCUIT ASSEMBLY 1244465



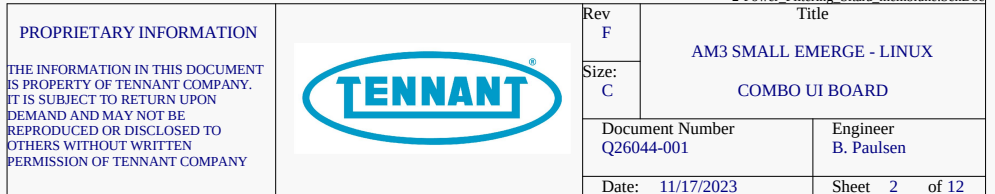
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POWER SUPPLY +5V, 75VIN, 3A
1.5% feedback reference accuracy



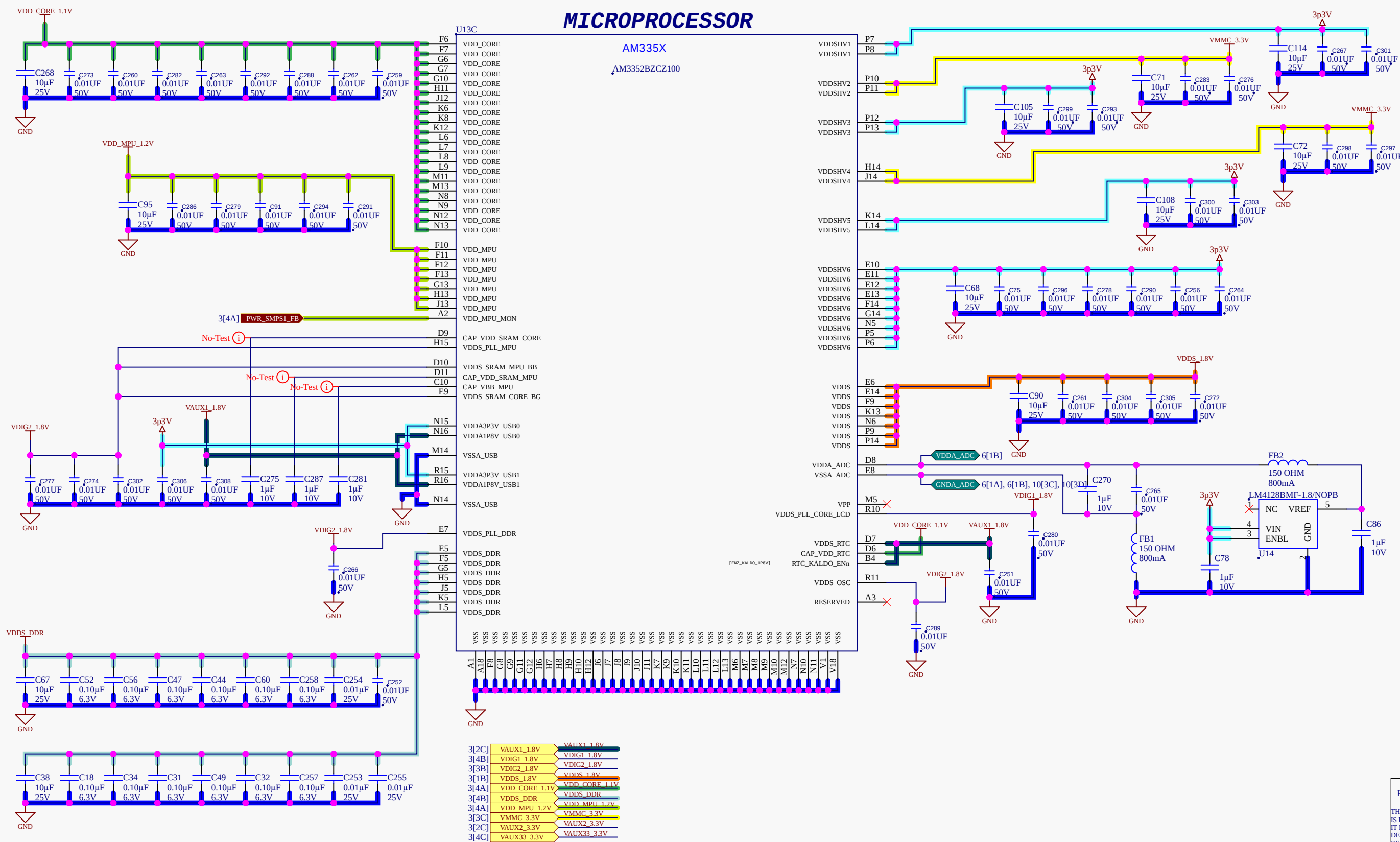


A

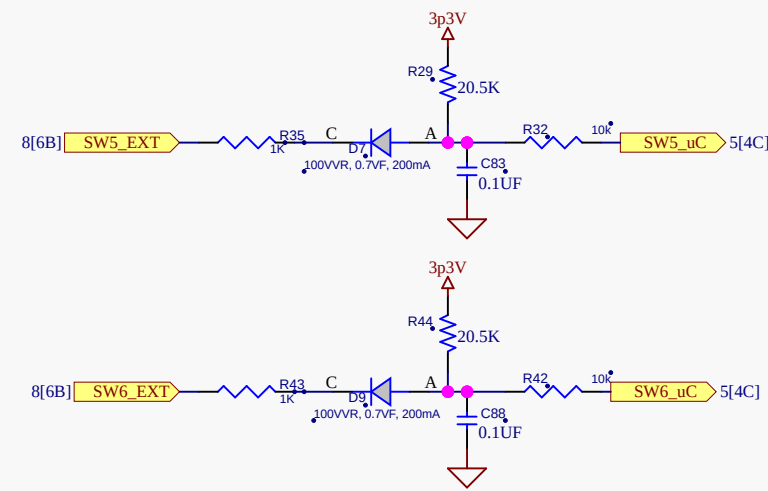
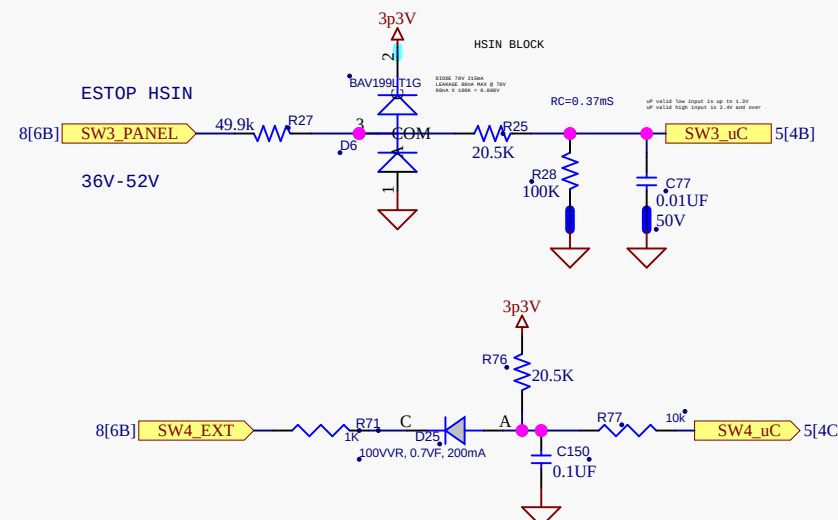
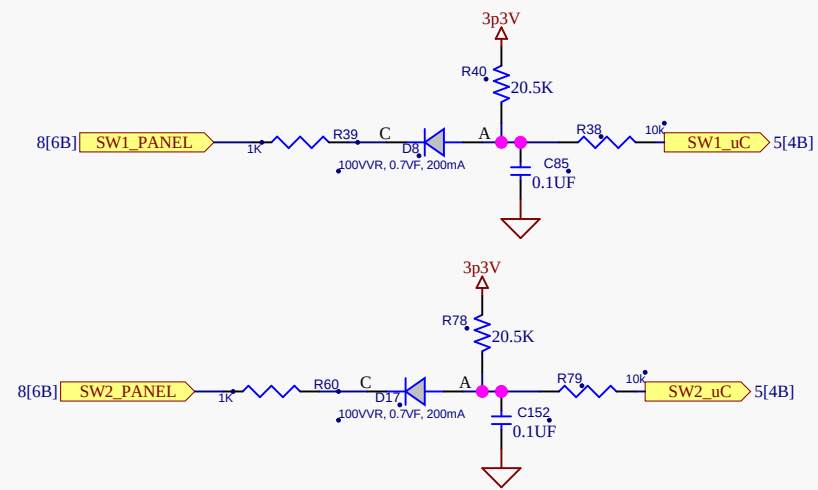
B

C

D

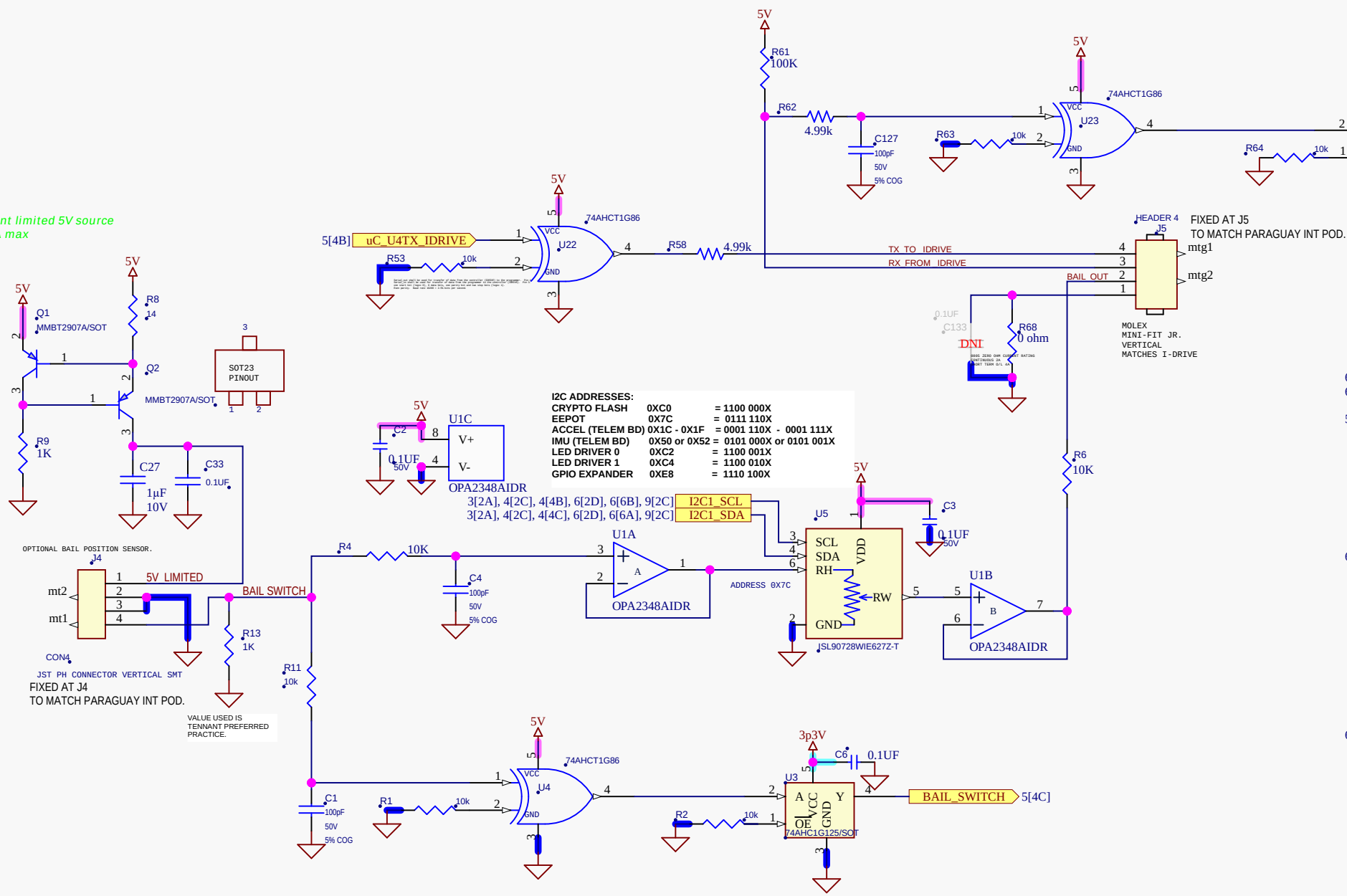


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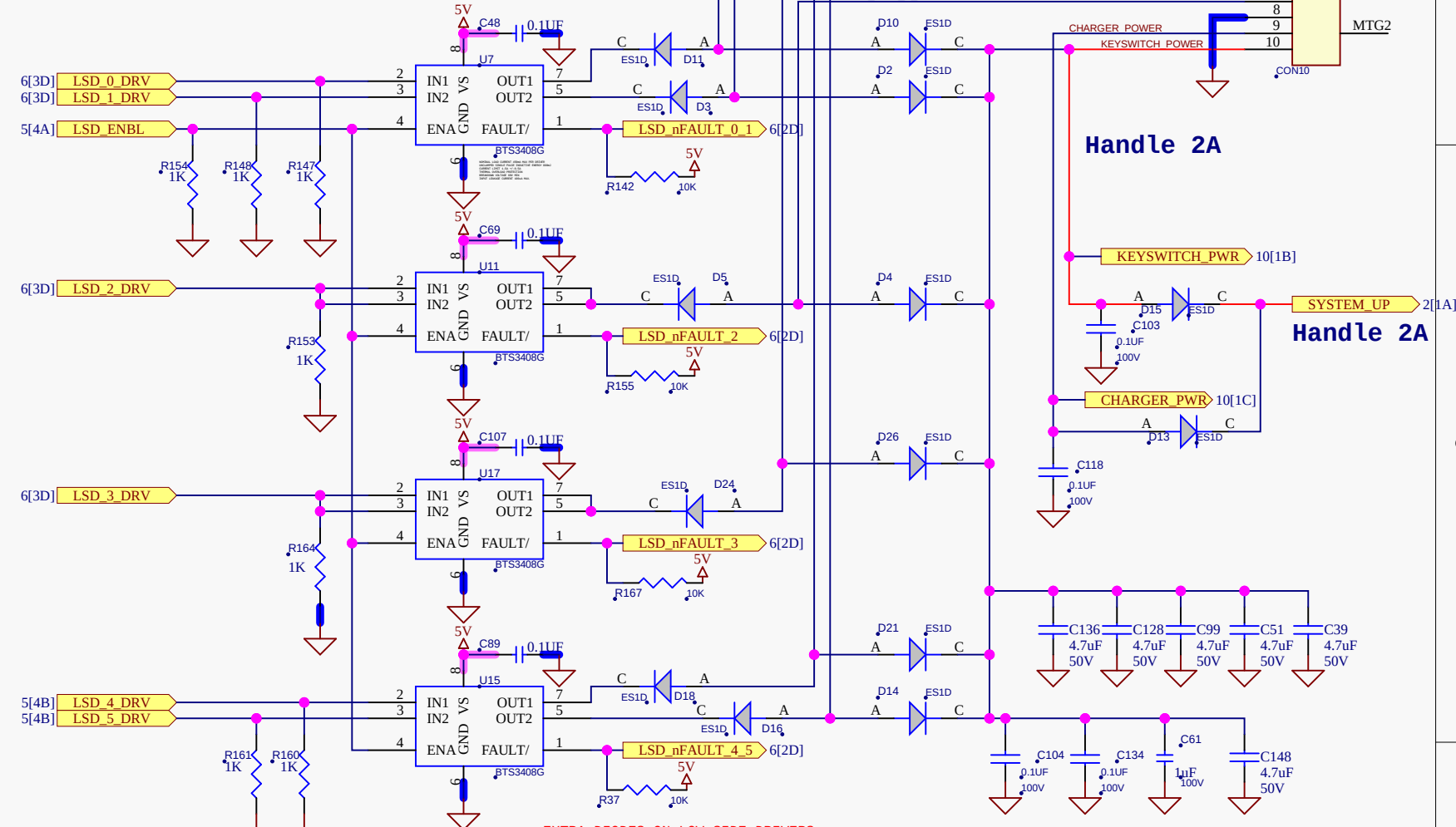


B

Current limited 5V source
50mA max



ADD THIS SAFETY IN THE CODE:
IF NO VOLTAGE IS SENSED AT E-STOP INPUT,
DO NOT TURN ON WIND PUMP.
THIS PROTECTS WIND PUMP DRIVER IN CASE
THE BOARD HAS BEEN INSTALLED IN A
VOLGA OR VOLGA NET MACHINE.



C

D

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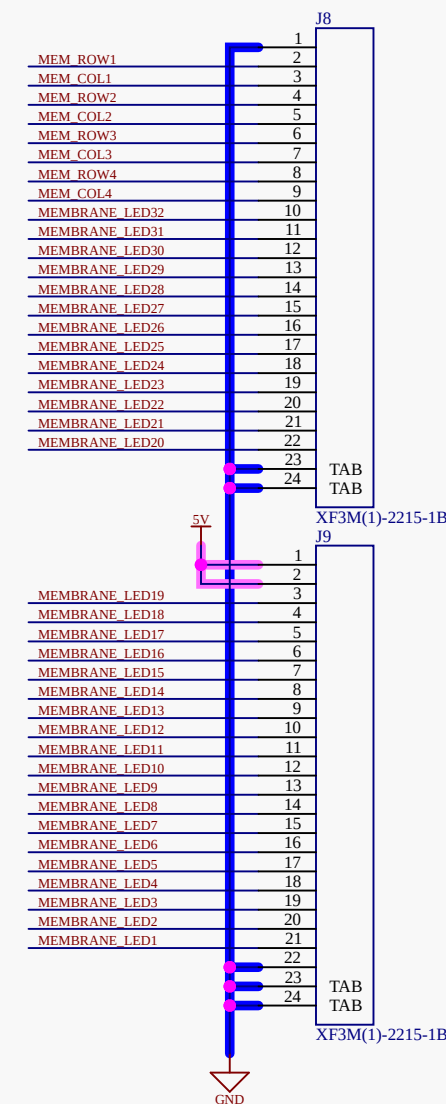
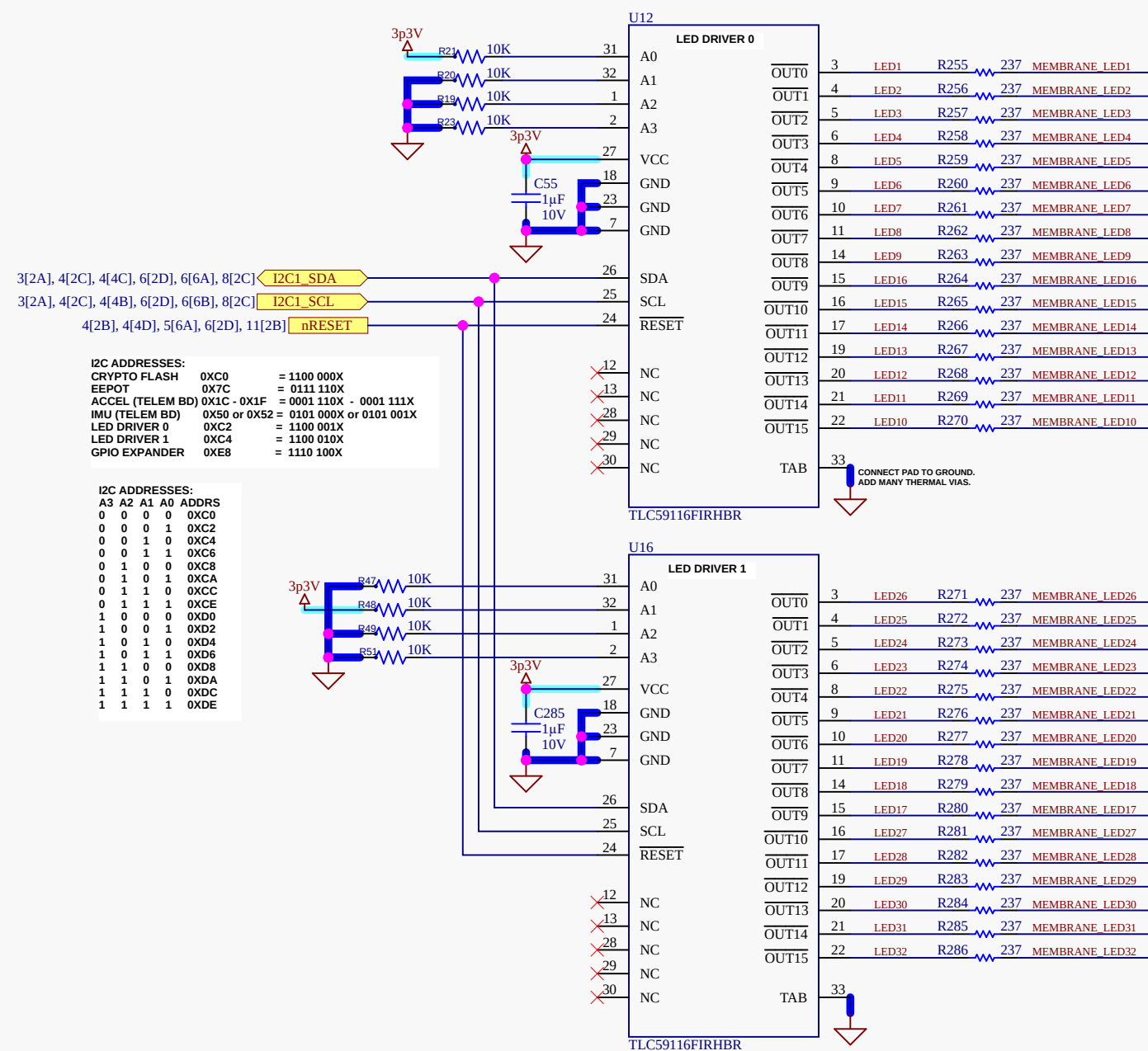
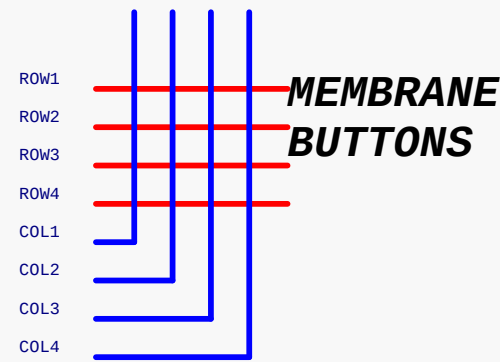
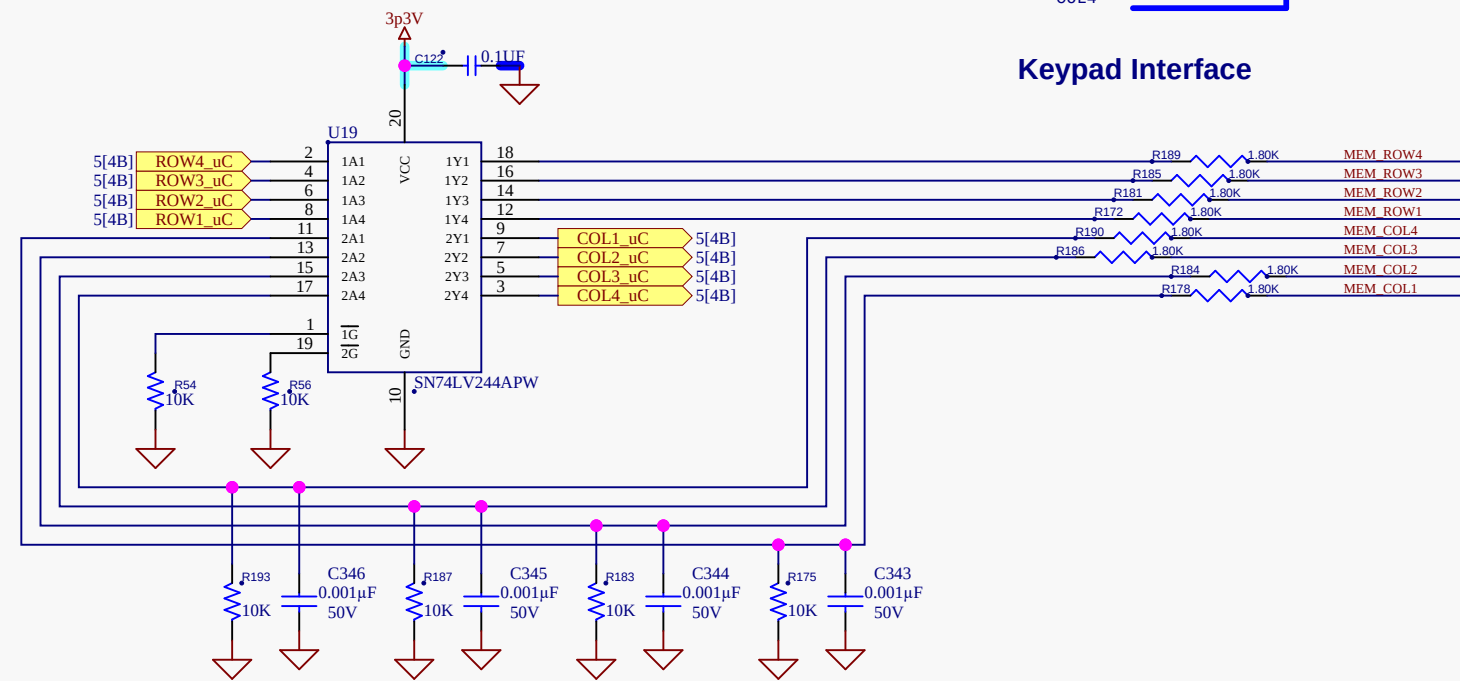


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8-Drivers_Sitara_membrane.SchDoc

Keypad & LED interfaces

Conventional 4 x 4 scanned keyboard. CPU will output a logic "1" to the Rows one at a time, and scan the returning Cols for a key press. Pull-downs on the Cols insure a logic "0" if a key in that column is not pressed. 244 isolates the CPU from the keypad. Series resistors will protect the buffer.

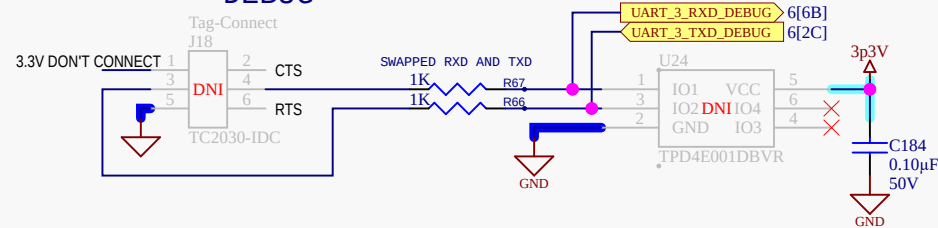


INTERFACES

SERIAL DEBUG

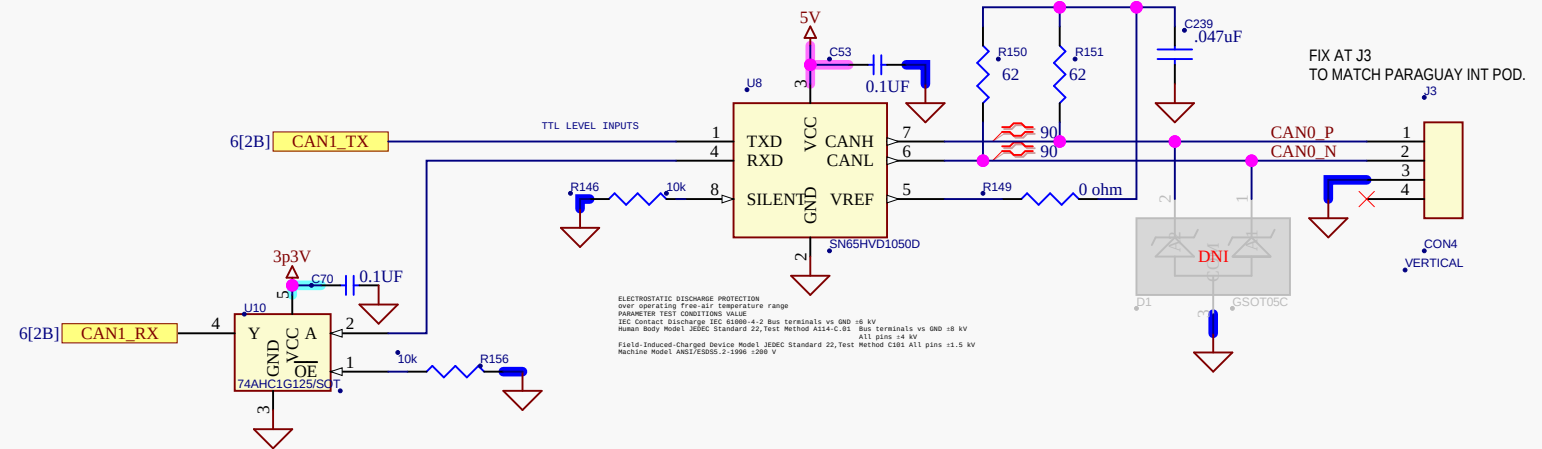
FIX REFDES TO J18
TO MATCH PARAGUAY INT POD

DEBUG



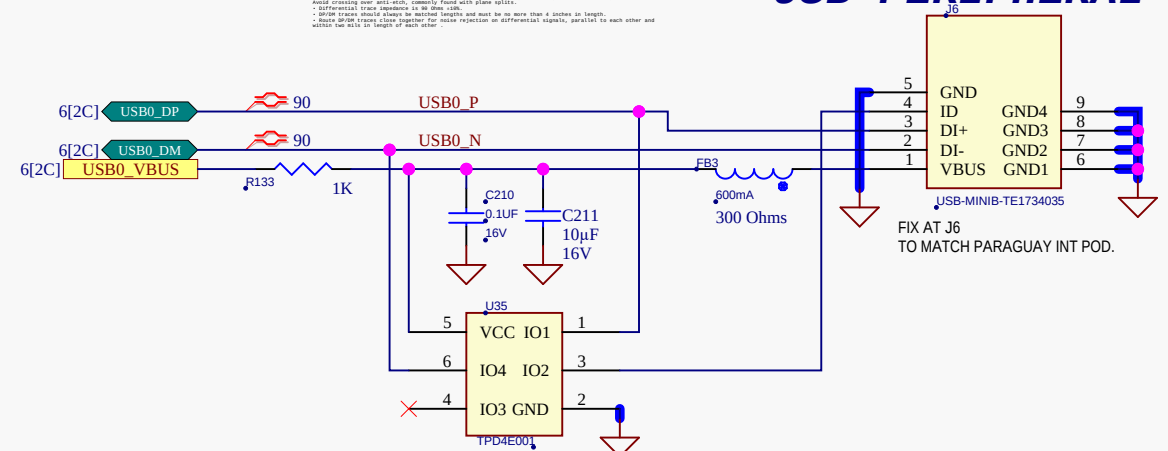
CAN INTERFACE

TRANSCIEVER IS AN ENDPOINT.
POPULATE 62 OHM RESISTORS.
MAKE ACCESSIBLE FOR REMOVAL.

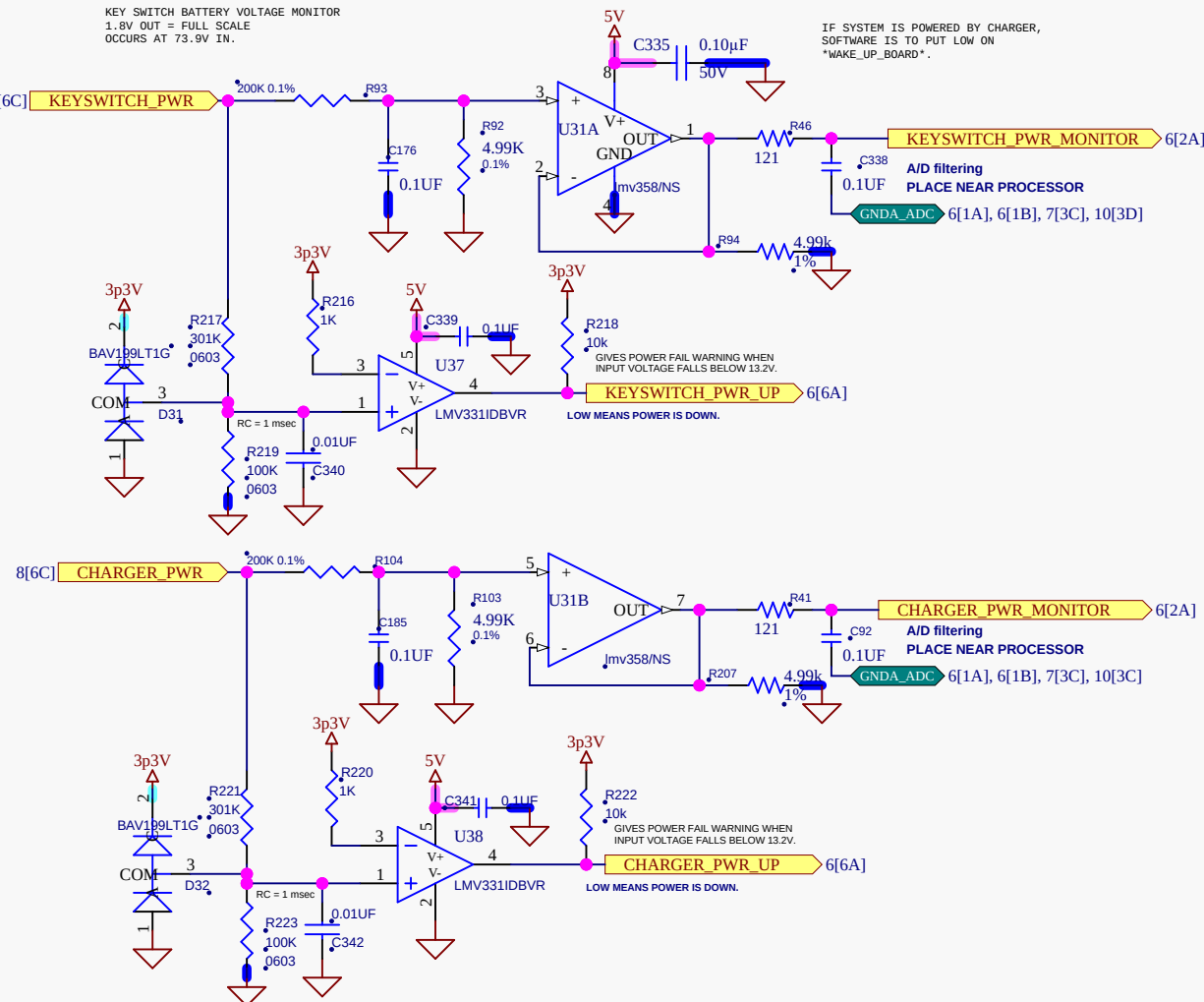


CPU Pin to be configured as GPIO, used to generate a interrupt when VBUS drops, in order to disconnect internal 1.5K on USB+. See datasheet 18.3

USB PERIPHERAL

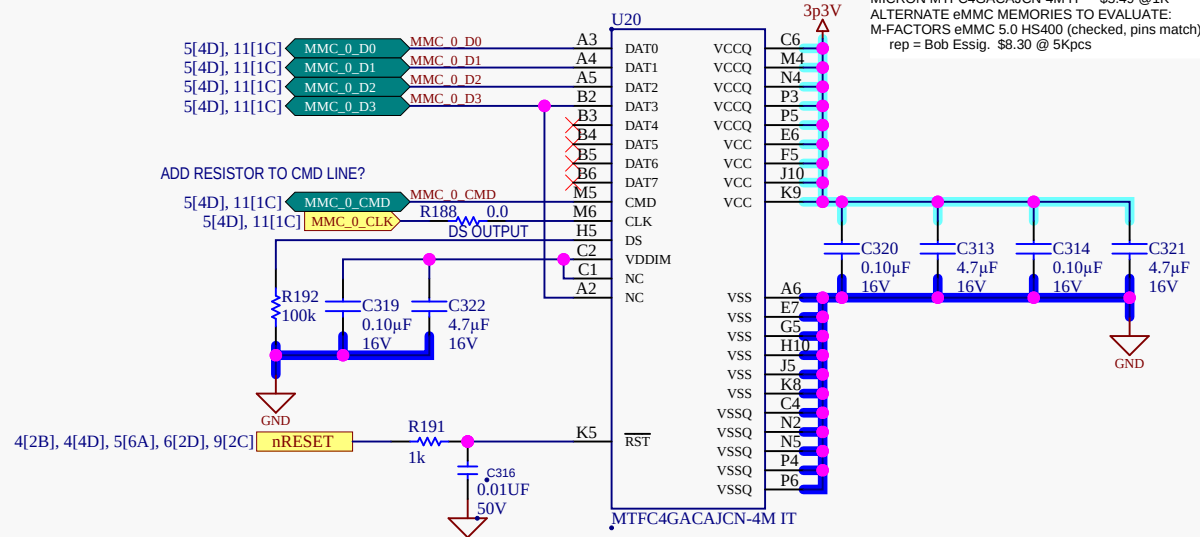


ESD PROTECTION 1.5pF 15
PINOUT FIXED.

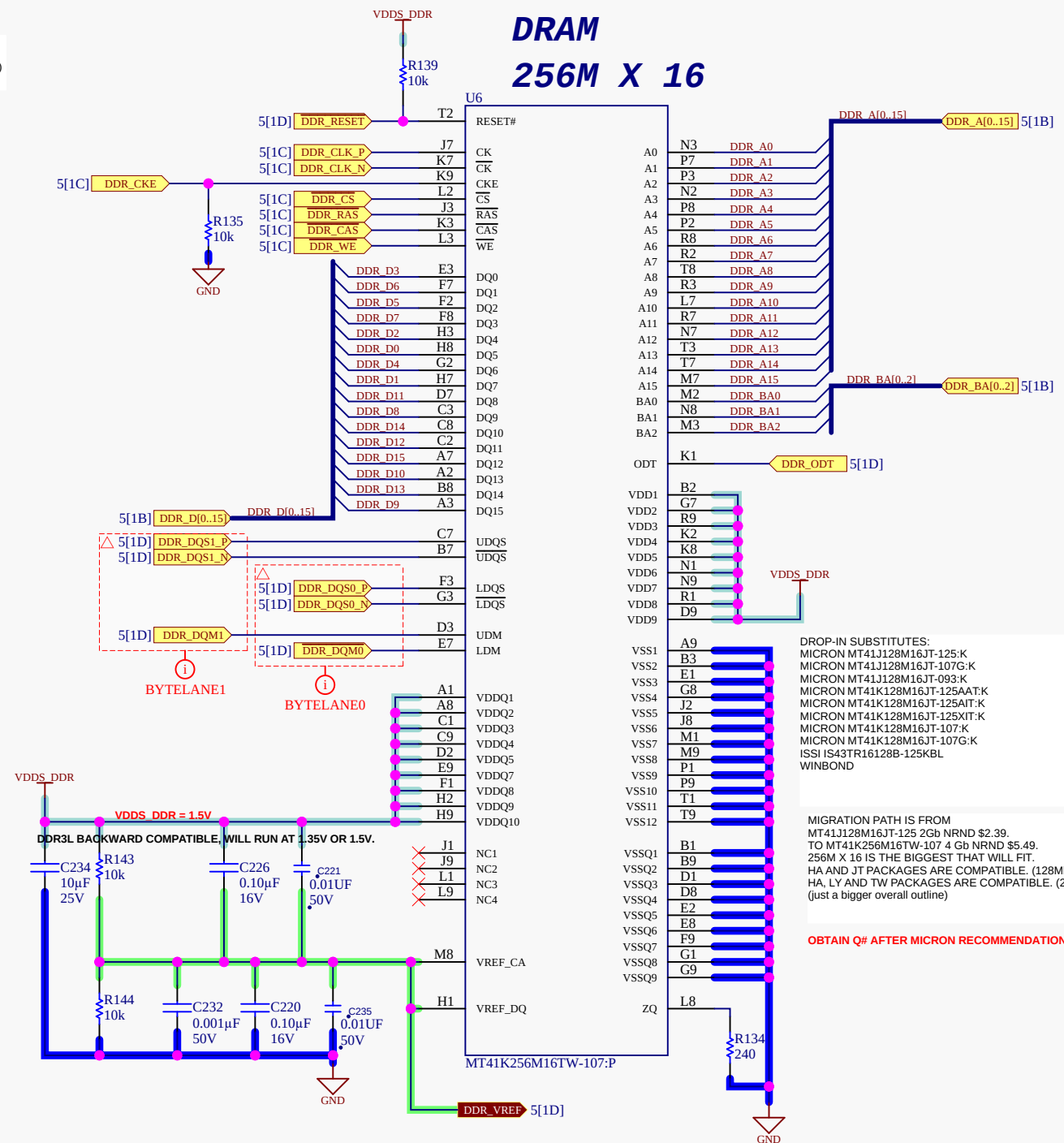


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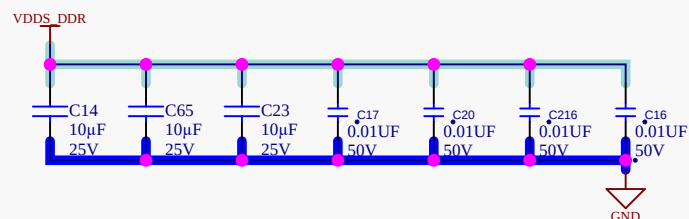
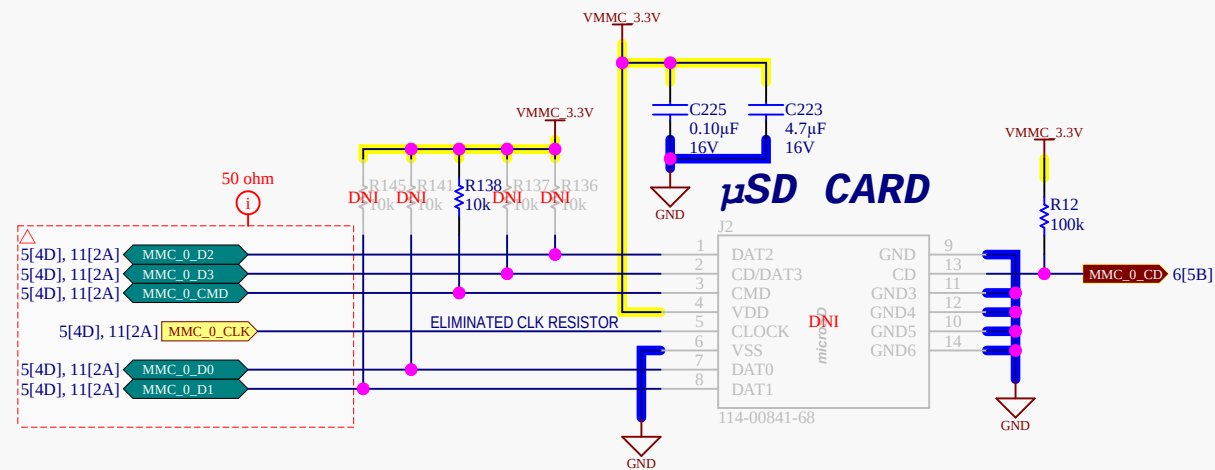
eMMC FLASH



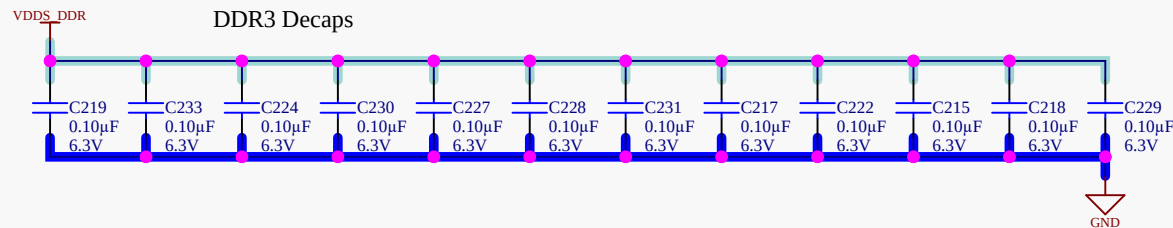
DRAM 256M X 16



µSD CARD



DDR3 Decaps



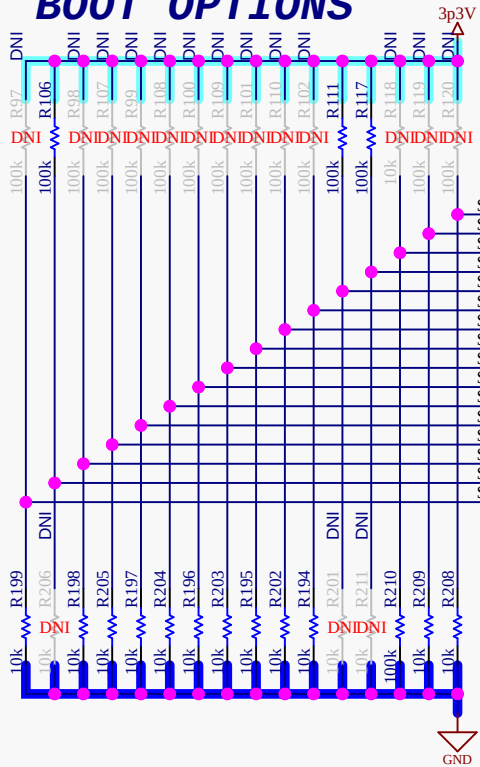
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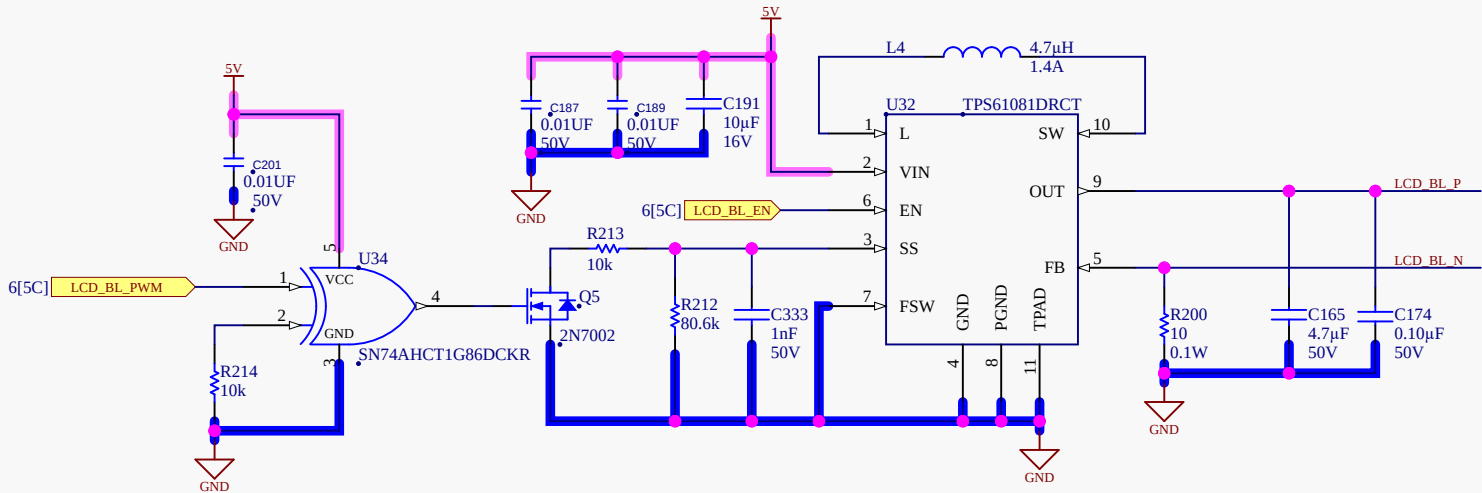
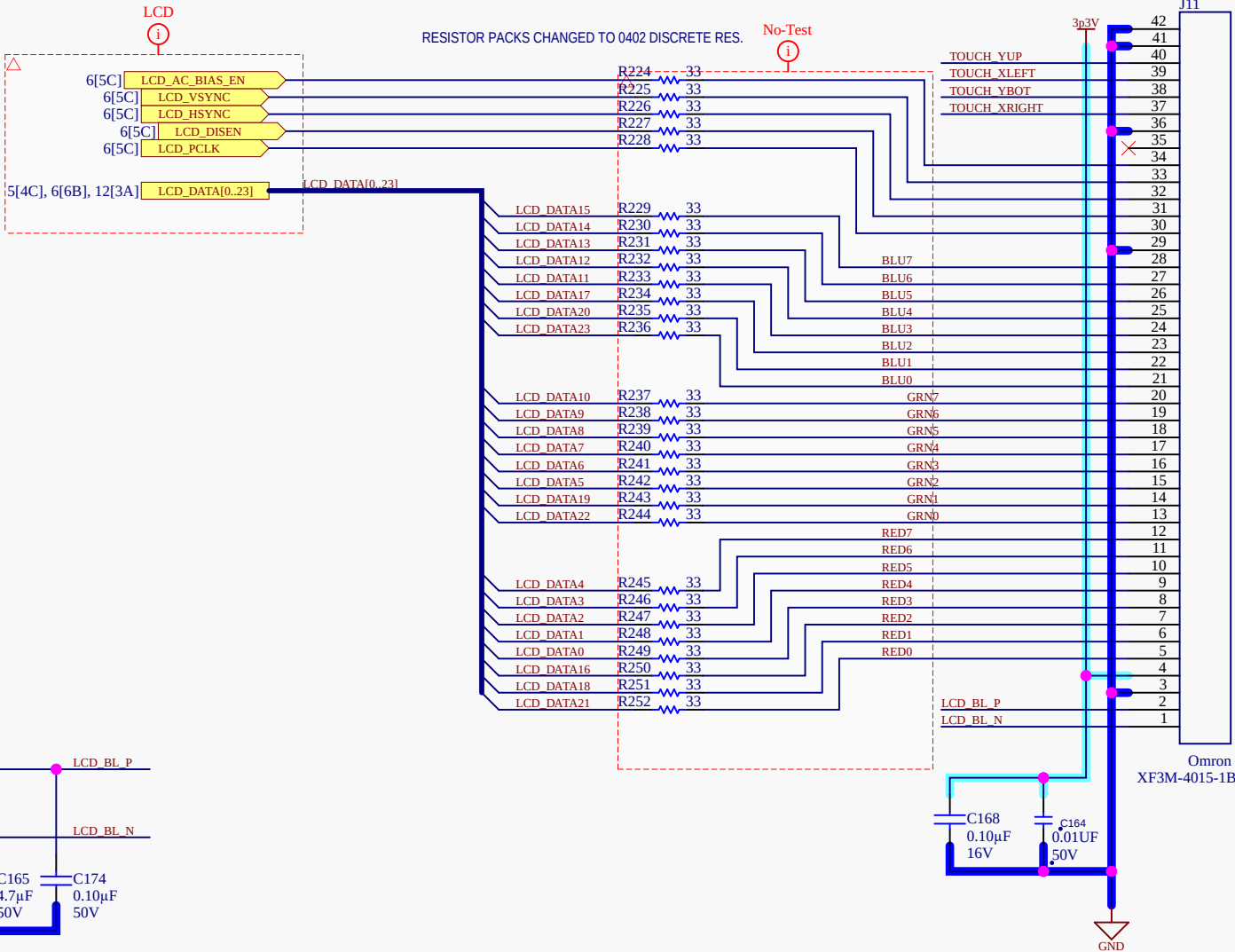
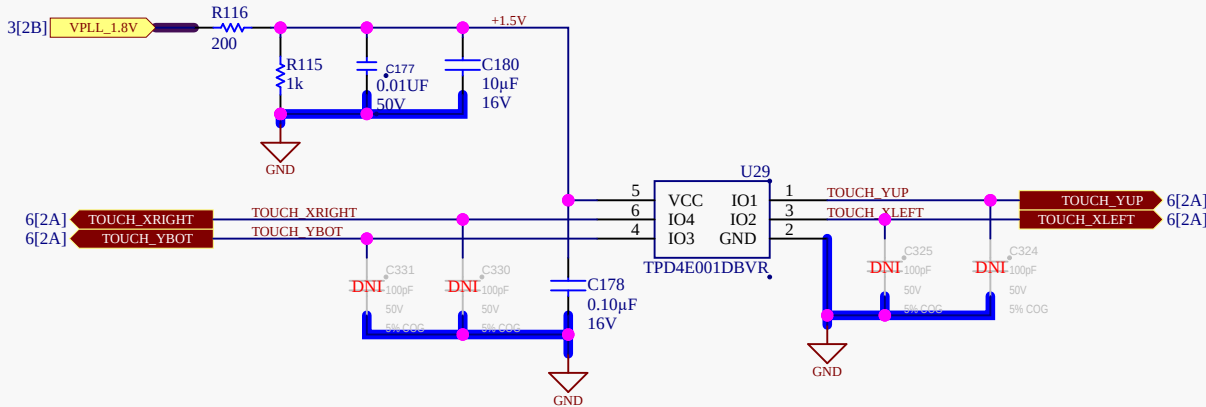


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BOOT OPTIONS



DESIRED BOOT OPTIONS:
SYSBOOT(15:14) = 01 = 24MHZ XTAL
SYSBOOT(13:12) = 00 = NORMAL OPERATION
SYSBOOT(11:10) = 00 = NON MUXED DEVICE
SYSBOOT(9) = 0 = ECC DONE BY ROM
SYSBOOT(8) = 0 = 8 BIT DEVICE FOR XIP BOOT
SYSBOOT(7:6) = 00 = DONT CARE
SYSBOOT(5) = 0 = CLKOUT1 DISABLED
SYSBOOT(4:0) = 11000 = BOOT SEQUENCE SPI0, MMC0, USB0, UART0



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