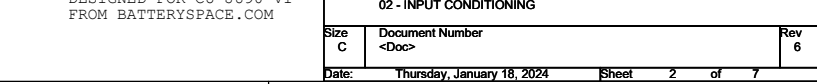
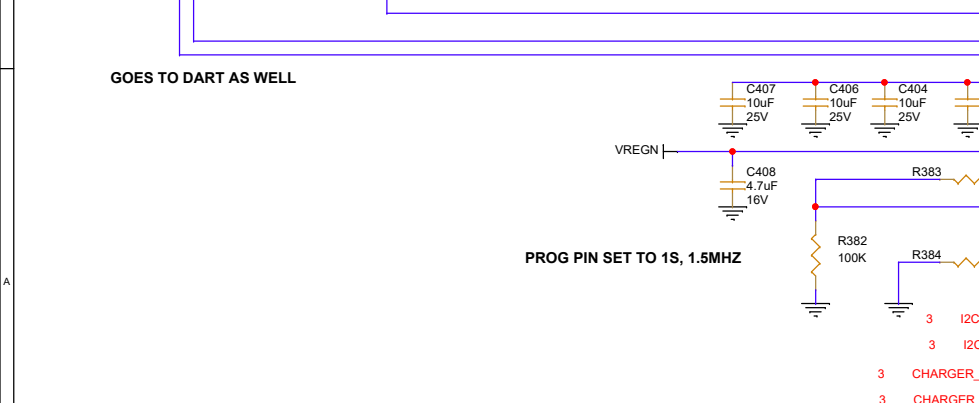
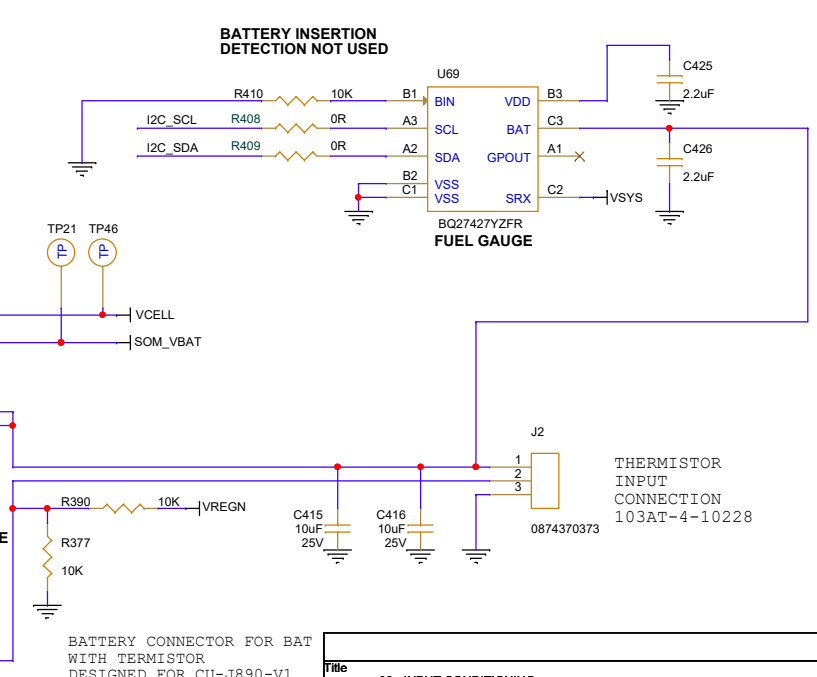
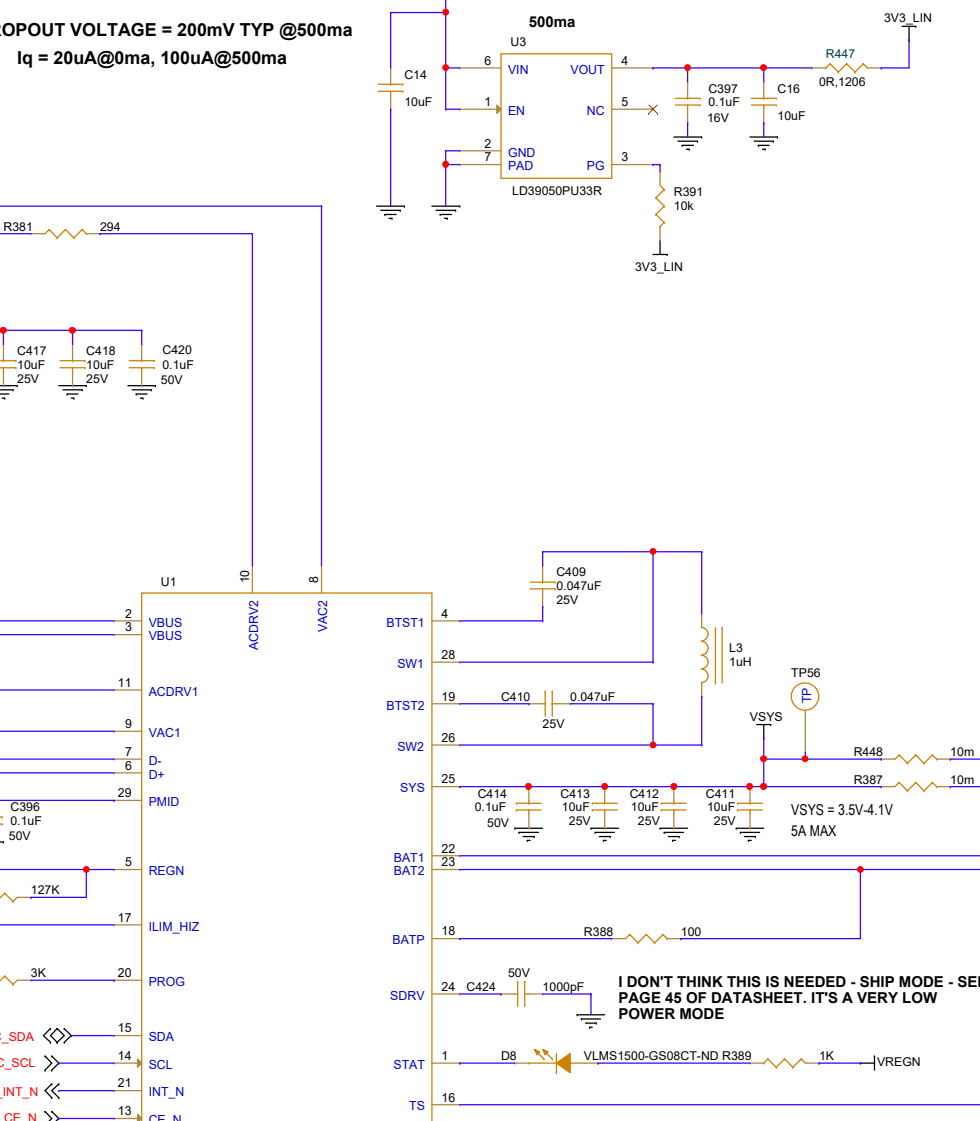
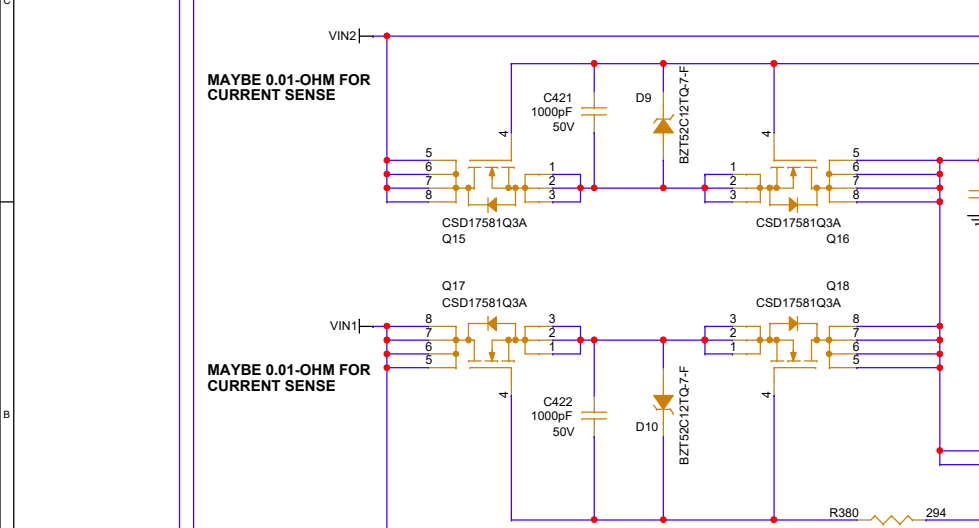
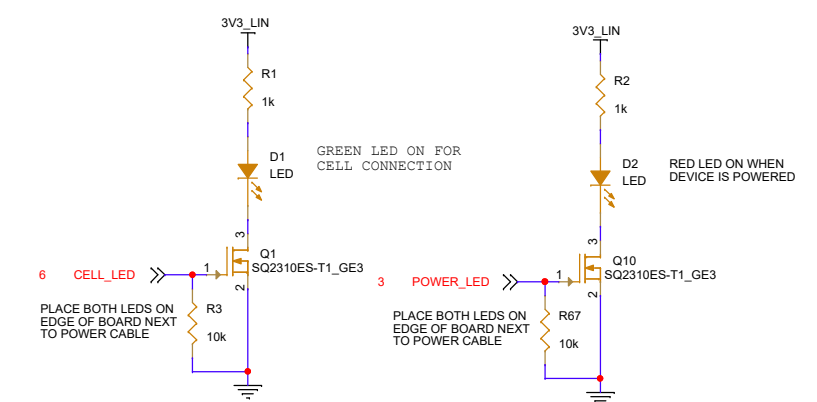
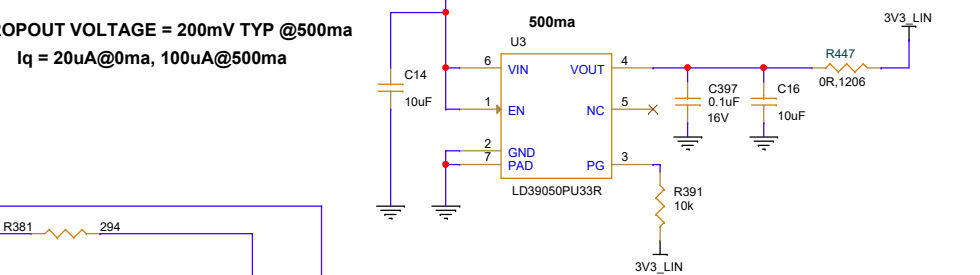
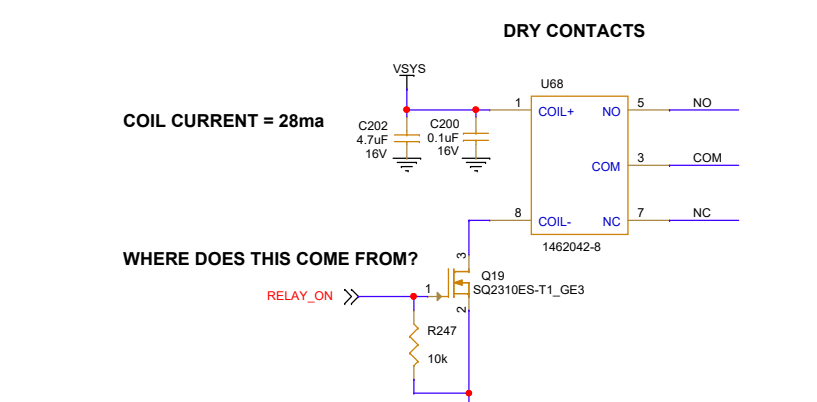
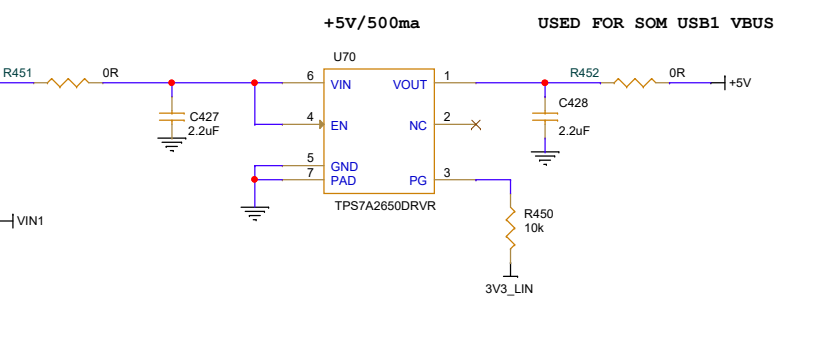
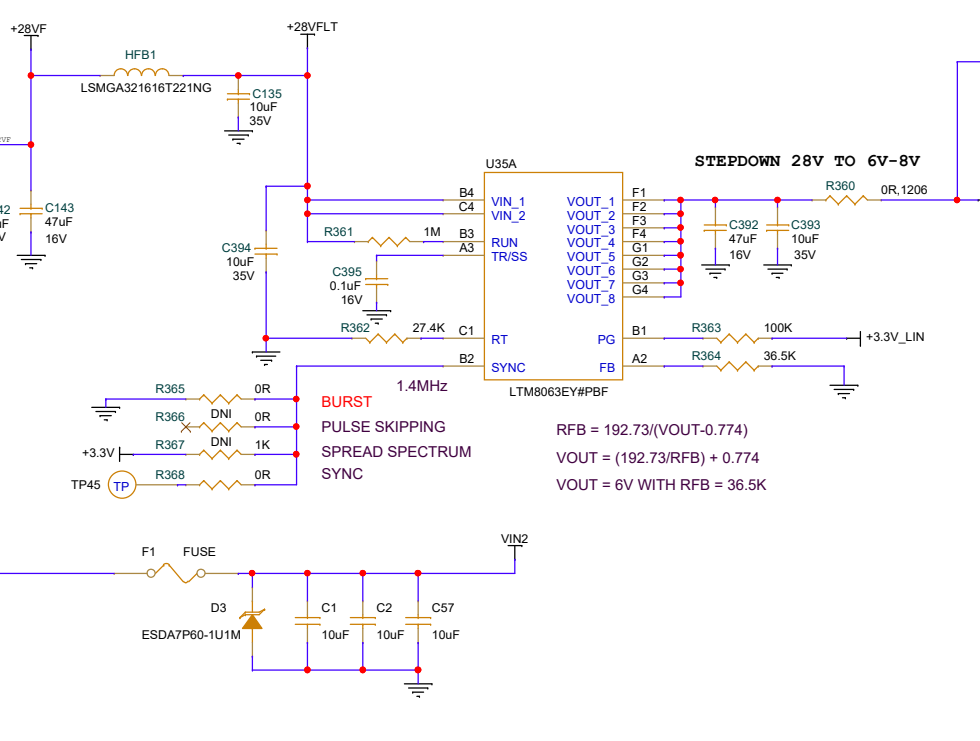
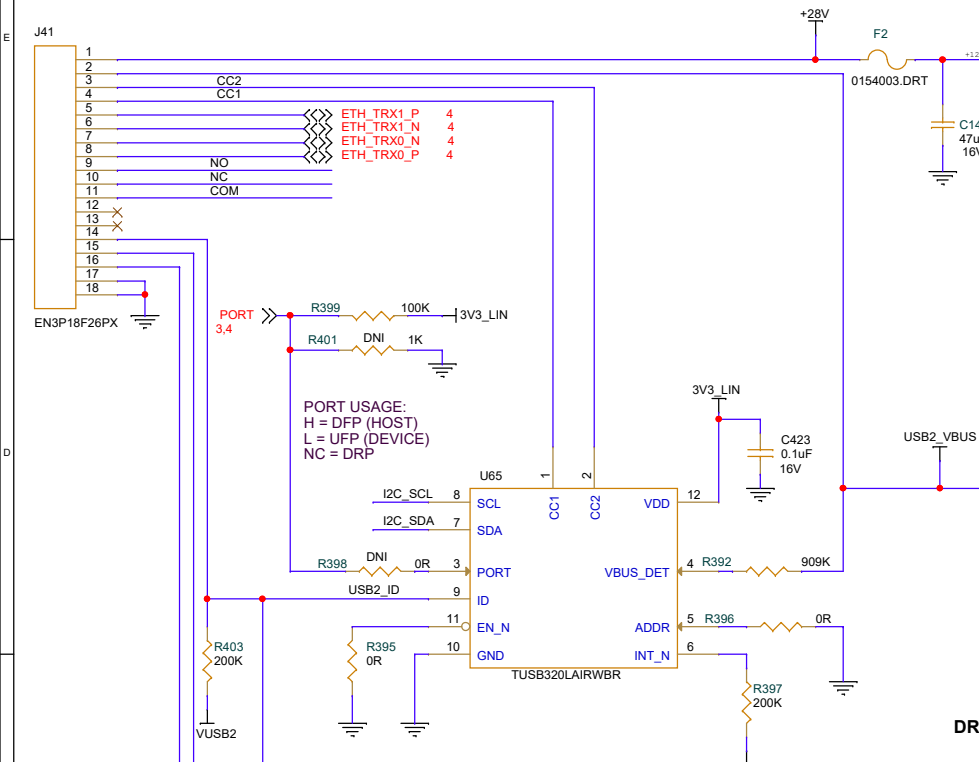


AIRSYNC BRIDGE - REV 6

- 1 - TITLE PAGE
- 2 - INPUT CONDITIONING
- 3 - POWER SUPPLIES
- 4 - PROCESSOR
- 5 - VARISCITE SOM
- 6 - CELLULAR

Title		
TITLE PAGE		
Size	Document Number	Rev
C	<Doc>	6
Date: Wednesday, January 17, 2024 Sheet 1 of 7		

OUTPUT CONNECTOR WILL HAVE:
 ETHERNET - 2 PAIRS
 USB OTG - WITH 2 CC LINES, ID LINE?
 5V USB BIDIRECTIONAL POWER
 28V POWER INPUT
 1 CONTACT CLOSURE INPUT - PULLUP TO 3.3V INTERNAL, CONNECTOR TO GPIO INTERRUPT ON ESP32
 USB MUST BE ABLE TO CONNECT TO USB-C, USB-A, BE A HOST AND BE A DEVICE

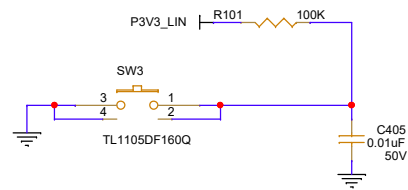


FORCES EXIT OF SHIP MODE

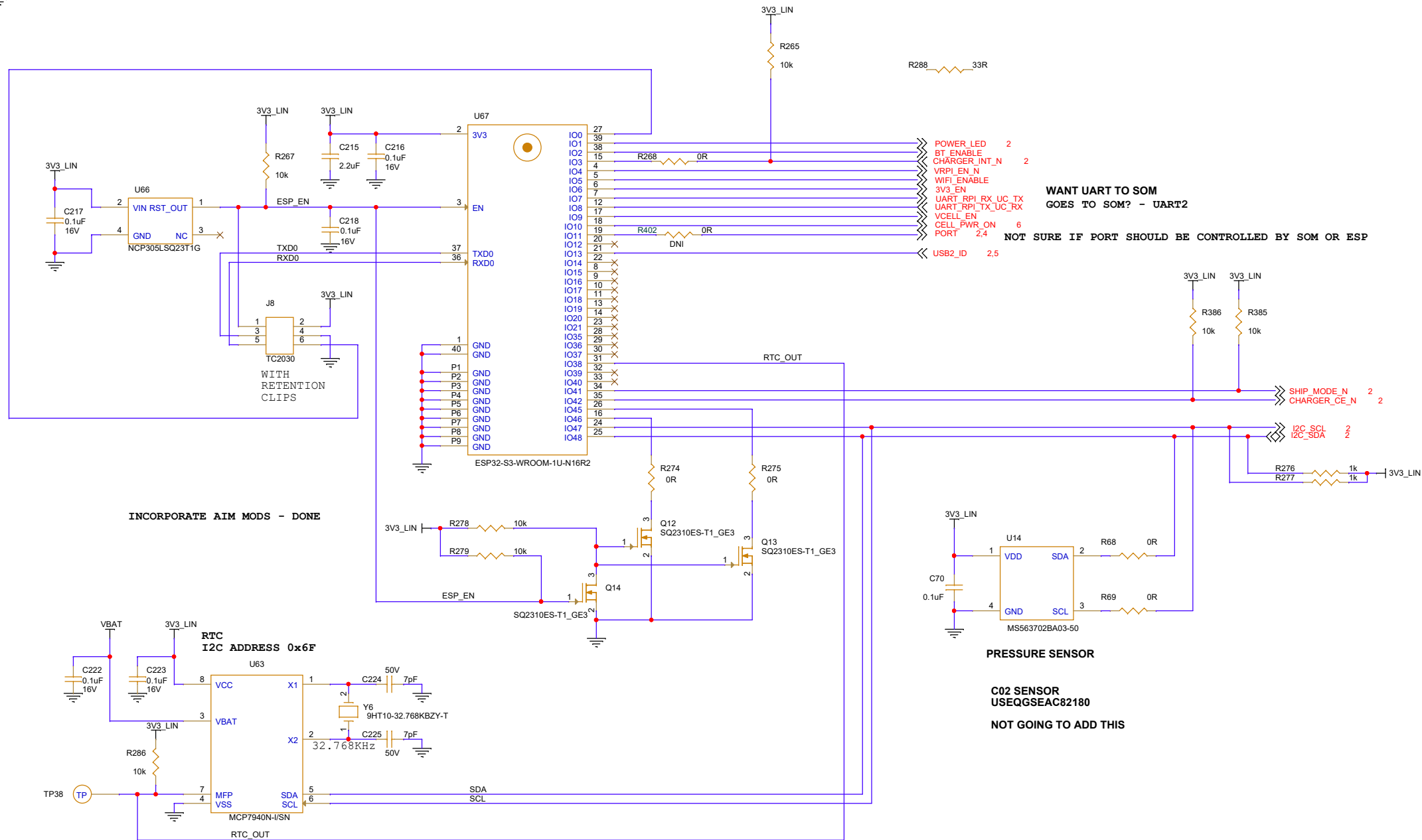
5A AVAILABLE ON VSYS
 3A CHARGE CURRENT

Title			02 - INPUT CONDITIONING
Size	Document Number	Rev	
C	<Doc>	6	
Date:	Thursday, January 18, 2024	Sheet	2 of 7

MARC WILL SELECT SWITCH THAT USER CAN PRESS

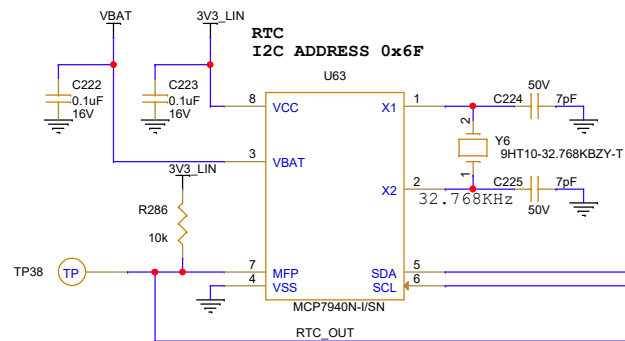


NEED ROOM ON PCB TO ACCOMMODATE MODULE WITH EMBEDDED PCB ANTENNA
ESP32-S3-WROOM-1-N4



WHAT IS VBAT??
COIN CELL?

INCORPORATE AIM MODS - DONE



Title		
03 - PROCESSOR		
Size	Document Number	Rev
C	<Doc>	6
Date:	Thursday, January 18, 2024	Sheet 3 of 7

MDIO NOT NEEDED

TERMINATE TWO UNUSED PAIRS IN 100-OHMS TO GND

ETH/MDIO

SOM SNVS DOMAIN O/p PWR
V = 1.8V I < 3mA

WIFI HOST WAKE

SOM INT VDDIO O/P PWR
V = 3.3V I < 50mA

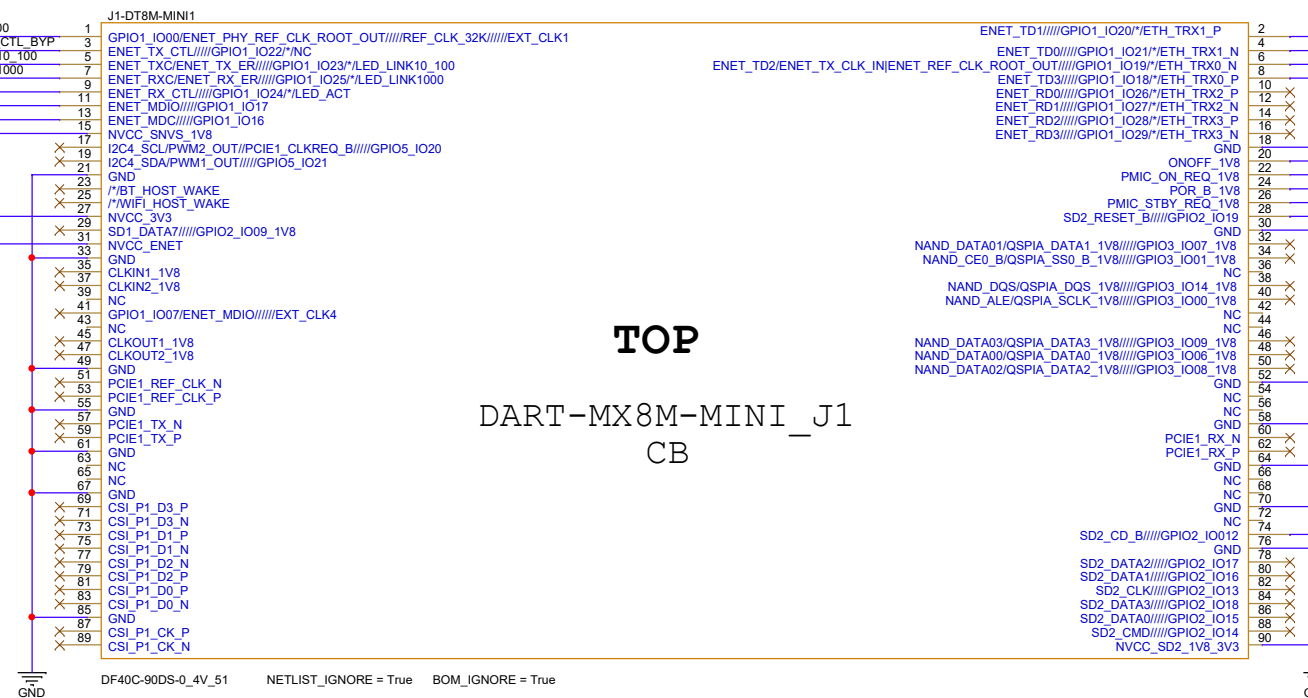
DO NOT CONNECT J1.31??

SOME SOM I/O IS A 1.8V LEVELS

ETH/MDIO

CTRL:
ON/OFF, POR,
PMIC_ON, PMIC_STBY

I DON'T KNOW WHAT TO DO WITH THESE OUTPUTS



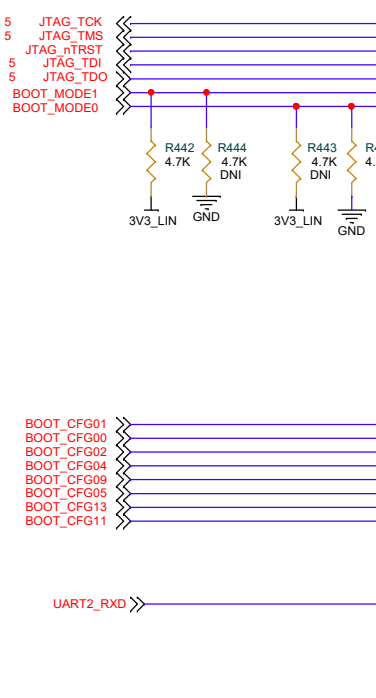
TOP
DART-MX8M-MINI_J1
CB

JTAG

BOOT MODE

SETUP FOR
INTERNAL BOOT
FROM eMMC

BOOT CFG



BOTTOM
DART-MX8M-MINI_J2
CB

WANT USB 2.0 OTG TO EXTERNAL CONN
WANT UART TO ESP32

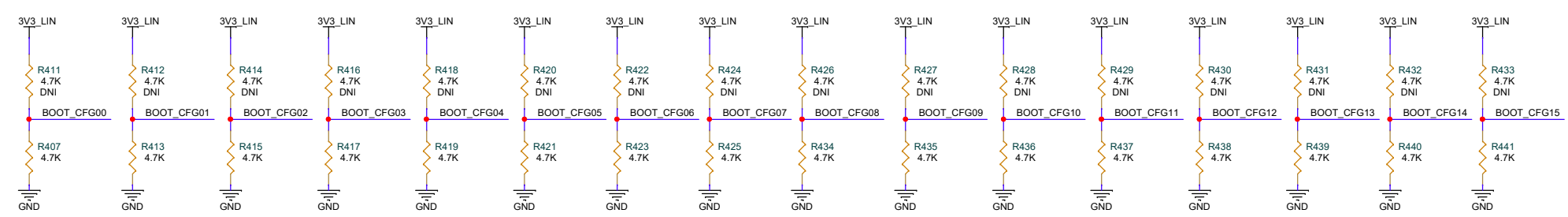
BOOT CFG

UART

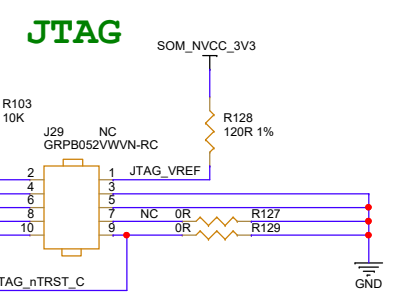
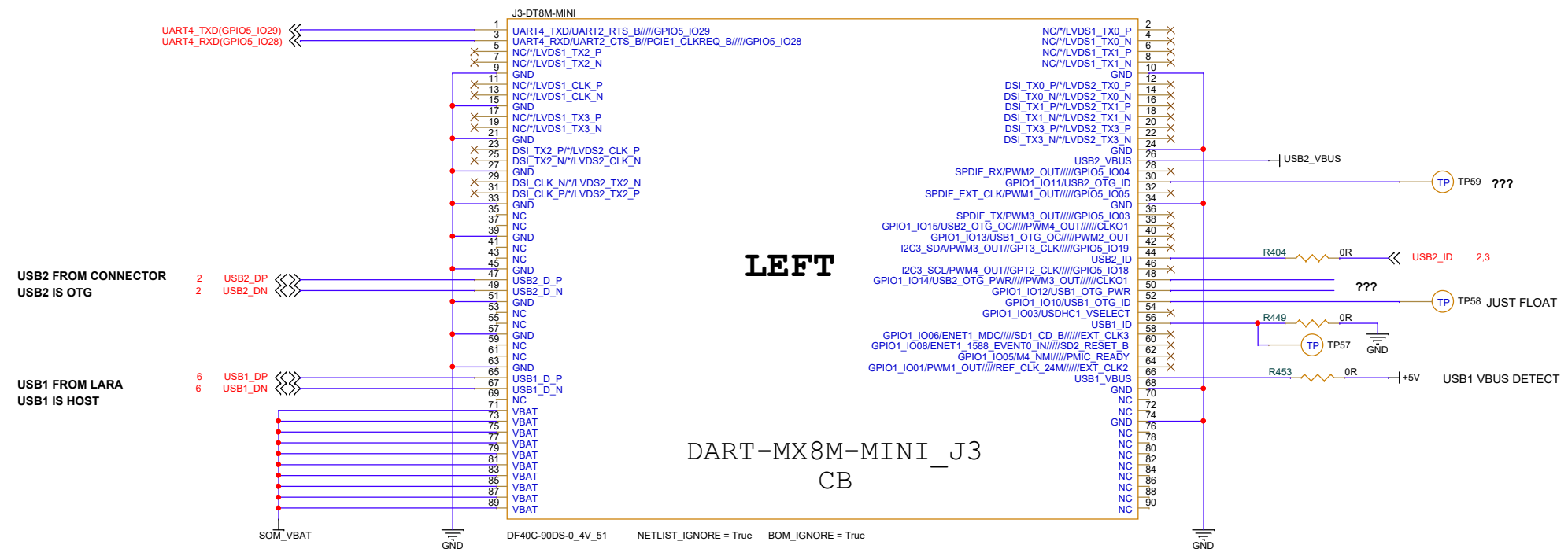
USE UART1 FOR DART DEBUG?
JUST NEED AN EXTERNAL UART/USB DONGLE
SOME SORT OF CONNECTOR?

BOOT CFG RESISTOR STRAPPING

DELETED DOTTED NETS
REMOVED PCIE AND CS11
REMOVED CODEC, SAI5 RX, SAI2 RX/TX



Title		
DART CONNECTORS		
Size	Document Number	Rev
C	<Doc>	6
Date:	Wednesday, January 17, 2024	Sheet 4 of 7

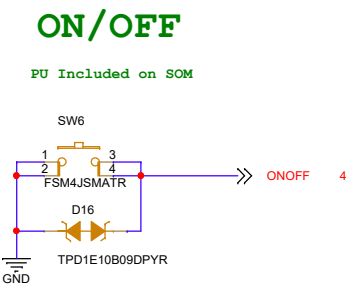


NOTE: DT8MP JTAG_nTRST net connected to JTAG_MODE having 8.2K PD on SOM. Exposed for boundary scan.

The new 10 pin smaller connector is now becoming an industry standard.

The ARM DStream comes with a 10-pin connector. If you need a ribbon, they can be purchased at Digikey: Samtec Inc MPN: FFSD-05-D-04.00-01-N

If you need to expand to a 20-pin connector for a different JTAG device, the expander board can also be purchased at Digikey: Olimex LTD MPN: ARM-JTAG-20-10



ON/OFF: A brief connection to GND in OFF mode causes the internal power management state machine to change state to ON. In ON mode, a brief connection to GND generates an interrupt (intended to initiate a software-controllable power-down). An approximate 5 second or more connection to GND causes a forced OFF.

Not used leave NC

Title		
DART CONNECTORS		
Size	Document Number	Rev
C	<Doc>	6
Date:	Thursday, January 18, 2024	Sheet 5 of 7

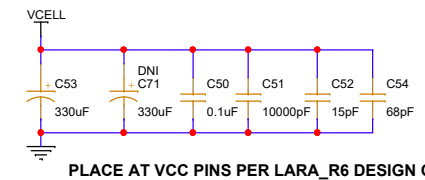
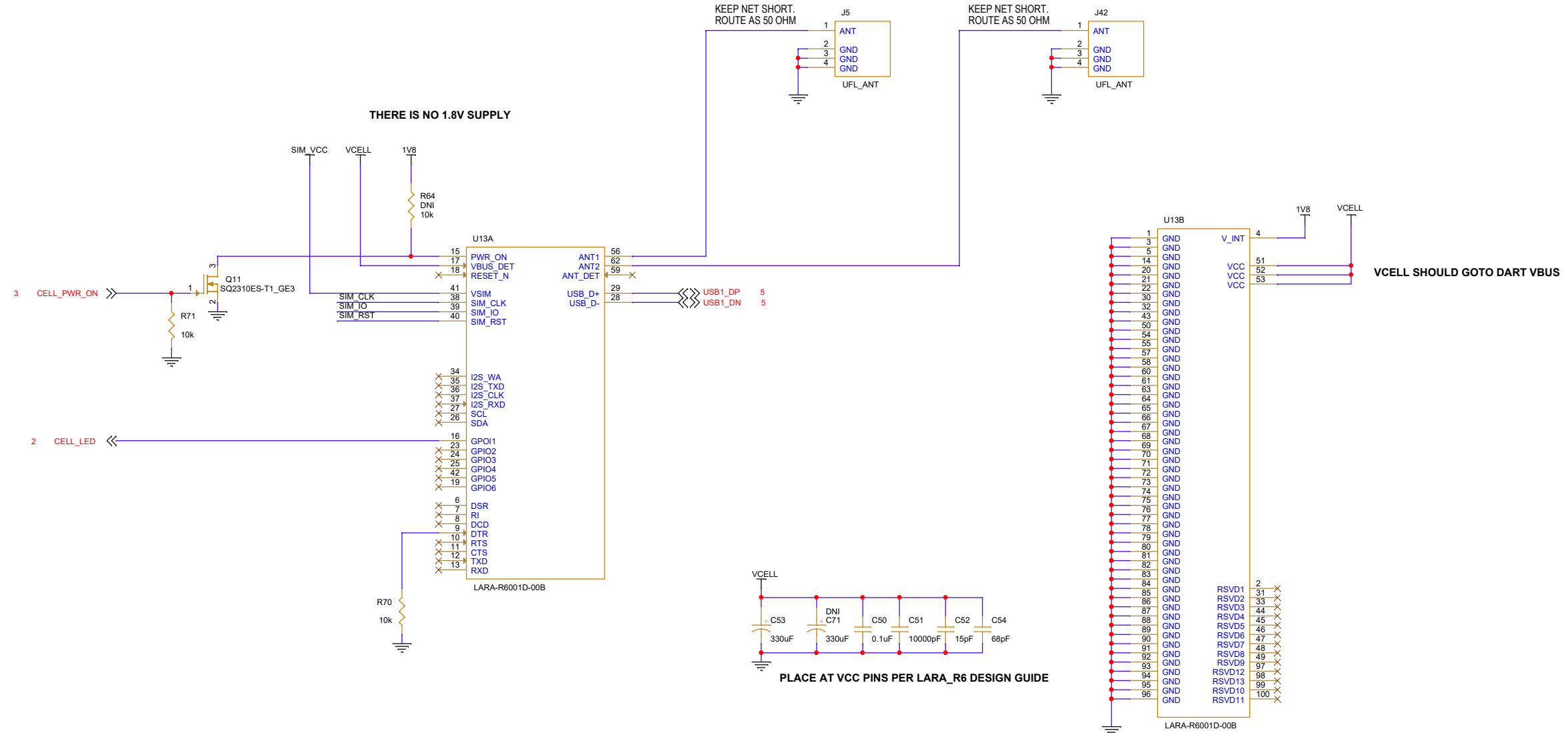
NEED TWO ANTENNAS FOR CAT4
ONE FOR CAT1

KEEP NET SHORT.
ROUTE AS 50 OHM

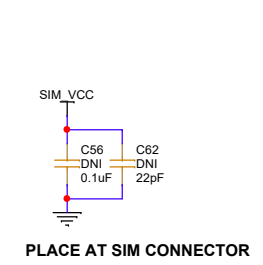
KEEP NET SHORT.
ROUTE AS 50 OHM

THERE IS NO 1.8V SUPPLY

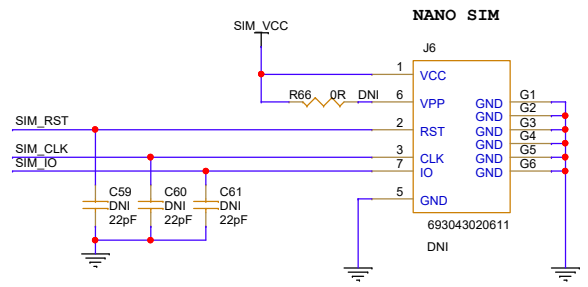
VCELL SHOULD GOTO DART VBUS



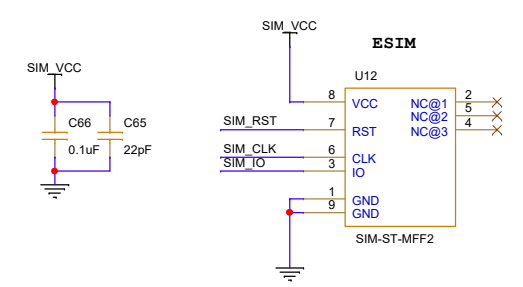
PLACE AT VCC PINS PER LARA_R6 DESIGN GUIDE



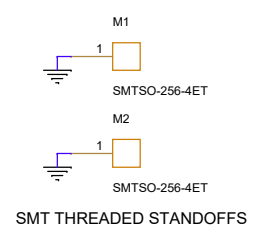
PLACE AT SIM CONNECTOR



NANO SIM



ESIM



SMT THREADED STANDOFFS

Title		
CELLULAR		
Size	Document Number	Rev
C	<Doc>	6
Date:	Wednesday, January 17, 2024	Sheet 6 of 7

The TUSB320 is intended for a USB-C port to negotiate DFP/UFP power delivery. The ID pin is an output from the 320 that is high by default, and will only go low when a UFP device is plugged in to the USB-C port. Here is a diagram to help show the behavior of ID.

Your processor could use the ID pin to control whether the BQ25672 is providing or sinking power from VBUS. Alternatively, you could read from the ATTACHED_STATE register in I2C.

Can I set the mode of operation with the I2C registers?
Yes this is ok to do. By default, the 320 will read the voltage at the PORT pin to determine DFP/UFP/DRP. You can write to the MODE_SELECT register to change the role of your port in I2C

I suggest keeping PORT NC to have DRP capability. This would make DRP your default setting, however it is ok to overwrite PORT in I2C as well.

Title		
NOTES		
Size	Document Number	Rev
C	<Doc>	6
Date:	Wednesday, January 17, 2024	Sheet 7 of 7