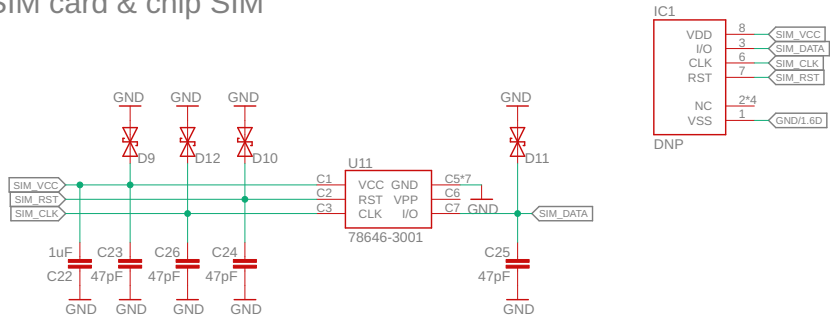
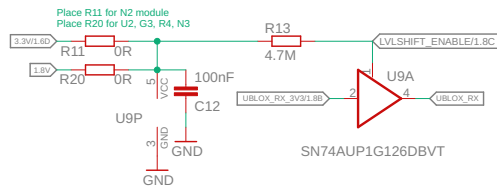


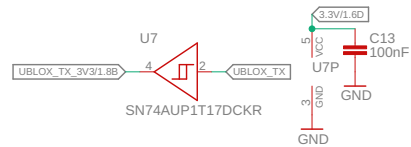
SIM card & chip SIM



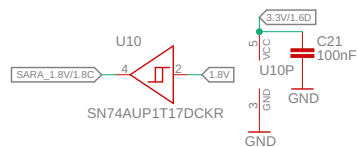
Level shifting (UBLOX RX)



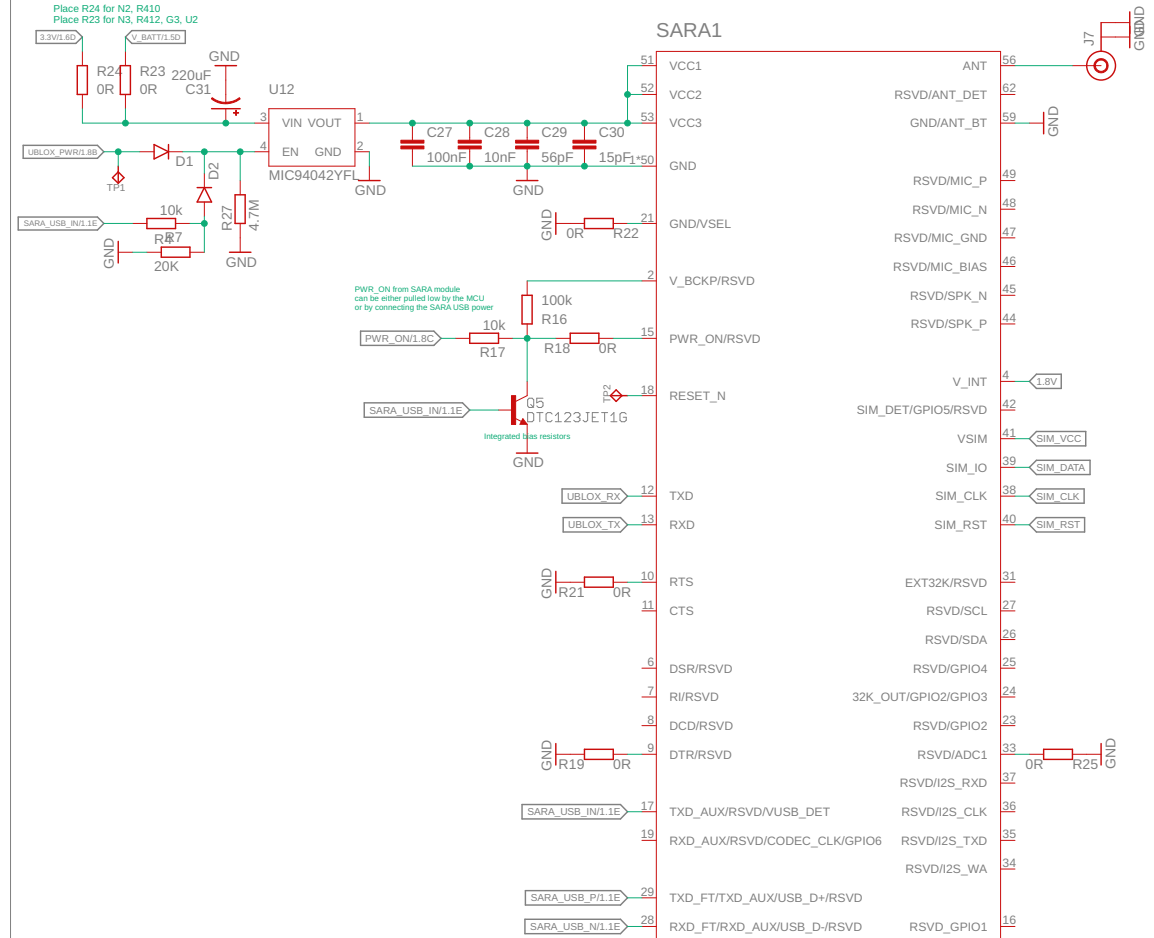
Level shifting (UBLOX TX)



Level shifting (V_INT)



ublox SARA module



SODAQ	Project #:
TITLE: SODAQ-SFF-rev3c	
Designed by: Nick Leijenhorst	VER: 3c
Reviewed by: Gregory Knauff	
Date: 04/12/2020 20:39	Sheet: 2/3

Revision changelog

Rev 1

- Changed UART of SARA module to make it identical to the regular SODAQ ONE
- Changed power switches to MIC94042

Rev 2

- Added reverse voltage protection on battery
- Added 0-ohm jumpers to SARA module like in the AFF
- Added a switch to pull PWR_ON low when USB is connected
- Added SARA USB male header to the board
- Moved the 2 SFF headers 2mm to the right to make room for SARA USB male header
- Removed pulldown on GPS power switch (it has internal pulldown resistor)
- SARA module will now be powered when SARA USB is powered
- 3.3V LDO will go on when SARA USB is powered
- Level shifter can be enabled/disabled for power savings
- PWR_ON pin has 10k series resistor to prevent short circuits
- SARA USB has reverse voltage protection

Rev 3

- Connected V_INT from SARA to MCU through a level shifter
- SARA symbol changed to represent ublox app note
- PWR_ON pin is now pulled low through a NPN transistor if SARA USB is connected
- R10 removed
- Added 4 test pads under the USB connector which can be used to solder a cable, or used in a test rig (1.27mm pitch spacing)
- Footprint for SIM chip added
- Replaced all diodes on the board with alternatives that have a lower forward voltage drop
- Replaced D1 and D6 with P-FETs in order to reduce forward voltage drop during normal operation
- Change R1 to 2k
- Headers now placed on bottom to avoid confusion for assembly
- All P-FETs are now the same, lower Rds(on)
- OR resistor added between 3.3V and GPS antenna power
- Added more protection on SIM card connector
- Modified USB connector footprint to exactly match the datasheet

Rev 3b

- Updated PWR_ON circuit, SARA USB goes through NPN transistor and the MCU goes through the old design from rev2 which is proven and works
- Updated schematic frames
- Updated schematic around SIM card connector (aesthetic change only for consistency across SODAQ SARA products)

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