

# MangoH Platform

SHEET 1 TABLE OF CONTENTS

SHEET 2 CONNECTORS

SHEET 3 RF, VBACKUP,USB

SHEET 4 RESET,JTAG,uC prog,control

SHEET 5 AUDIO (ANALOG & PCM)

SHEET 6 CONNECTORS & Headers

SHEET 7 UART, LEDs, ADC,Level Shifter

SHEET 8 UIMs & SD CARD

SHEET 9 GPIO, SPI,UART, SDIO,PCM Expanders

SHEET 10 IOT connectors,Sensors

SHEET 11 USB, Ethernet expansion

SHEET 12 PSU Front end, 3.7V DCDC

SHEET 13 Battery Charger

SHEET 14 5V boost, 3V3 buck, 1V8 Buck

SHEET 15 Arduino connection

## Project Variants

	1600643		
DNI	N		
UFL_M_RF	Y		
SMA_RF	N		
MIC_OMTP	N		
MIC_CTIA	Y		

## Variants description

DNI = Do Not Install  
UFL\_M\_RF = Add U.FL conn. on Main CF3 (do not define SMA\_RF)  
SMA\_RF = Add SMA conn. on Main CF3 (do not define UFL\_M\_RF)  
MIC\_OMTP = OMTP headphones config (do not define MIC\_CTIA)  
MIC\_CTIA = CTIA/AHJ headphones config (do not define MIC\_OMTP)

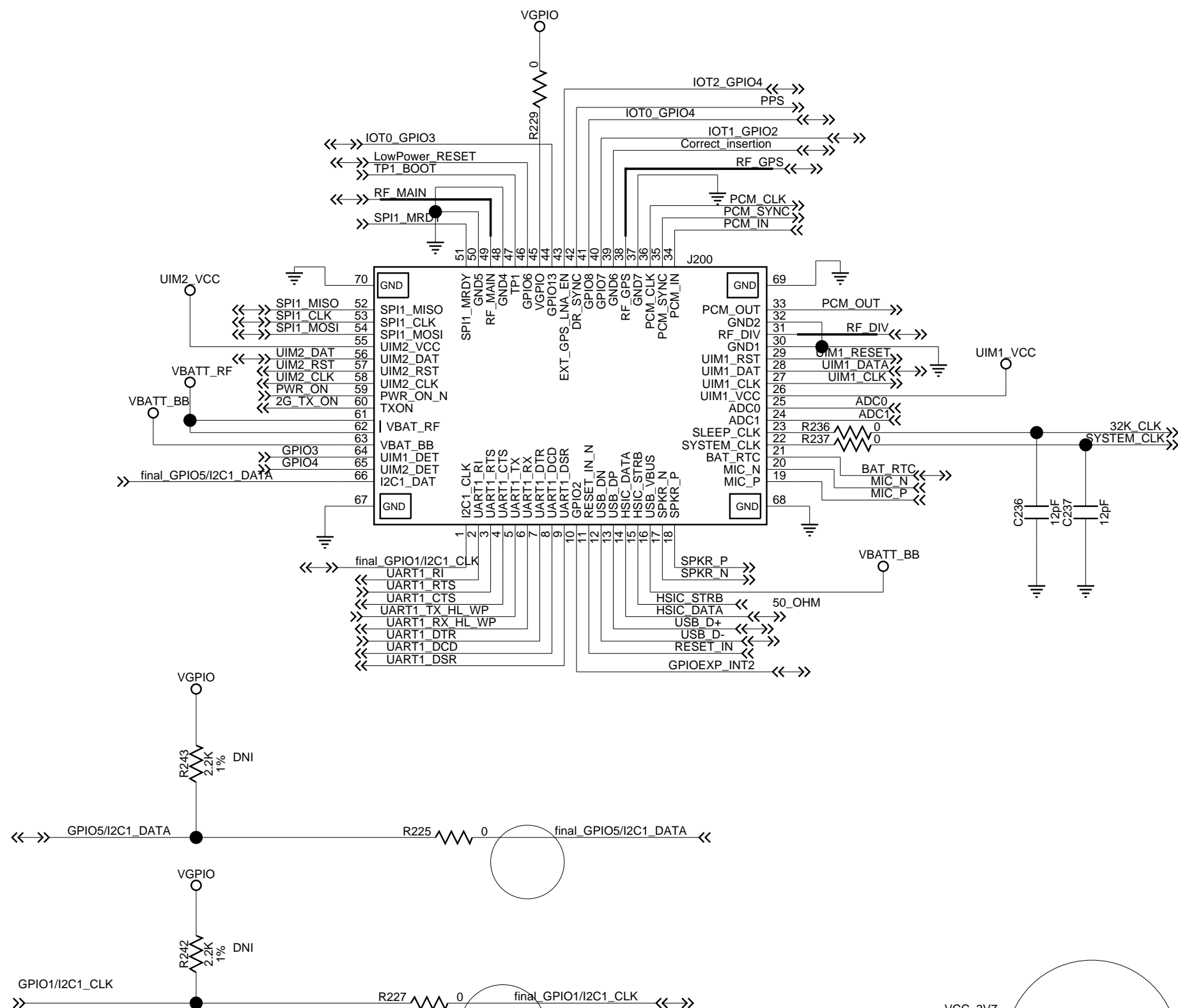
## I2C address list

08h = 3503 USB hub  
3Eh = I/O expander 1  
3Fh = I/O expander 2  
55h = Battery gauge  
6Ah = Accelerometer sensor  
6Bh = Buck+batt charger  
70h = I/O expander 3  
71h = I2C Hub

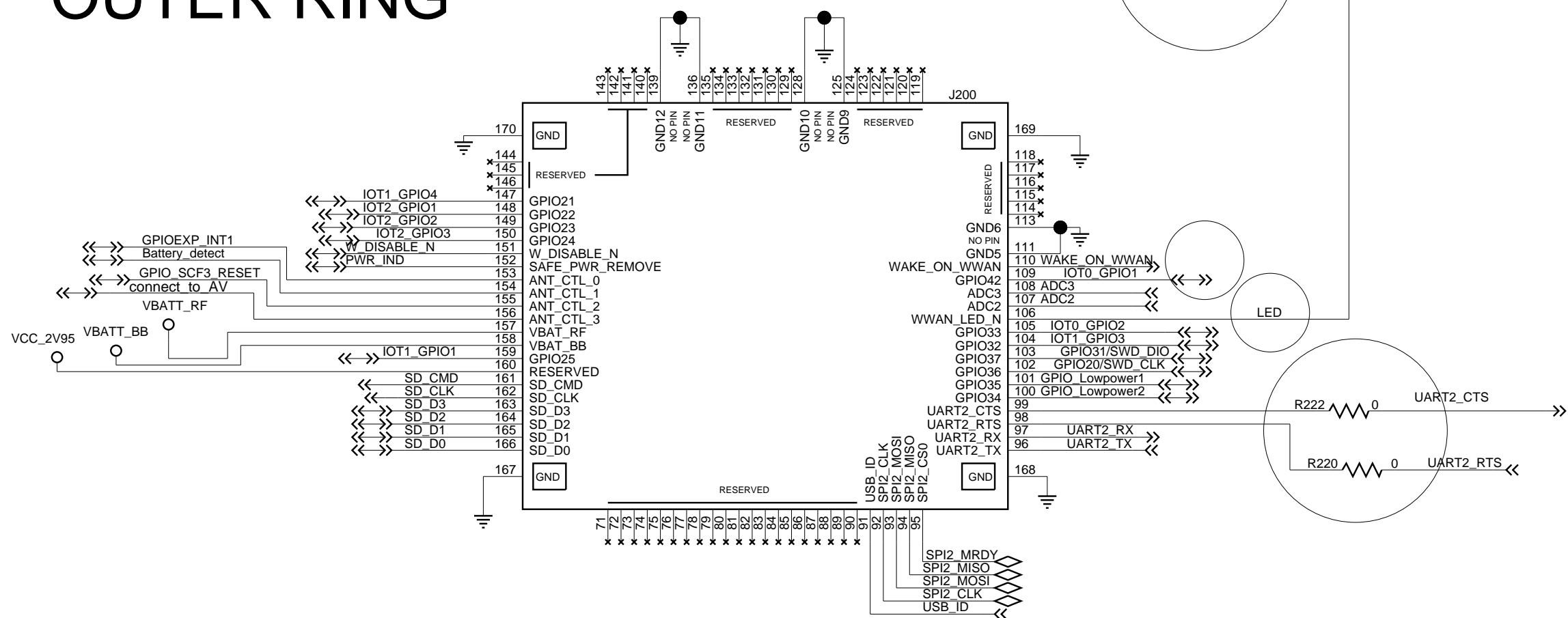
## REFERENCE

1600643 PCA, MANGOH  
1401063 PCB, MANGOH

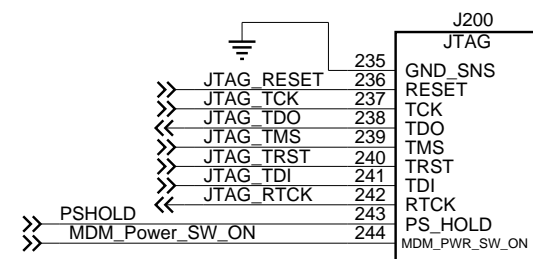
# INNER RING



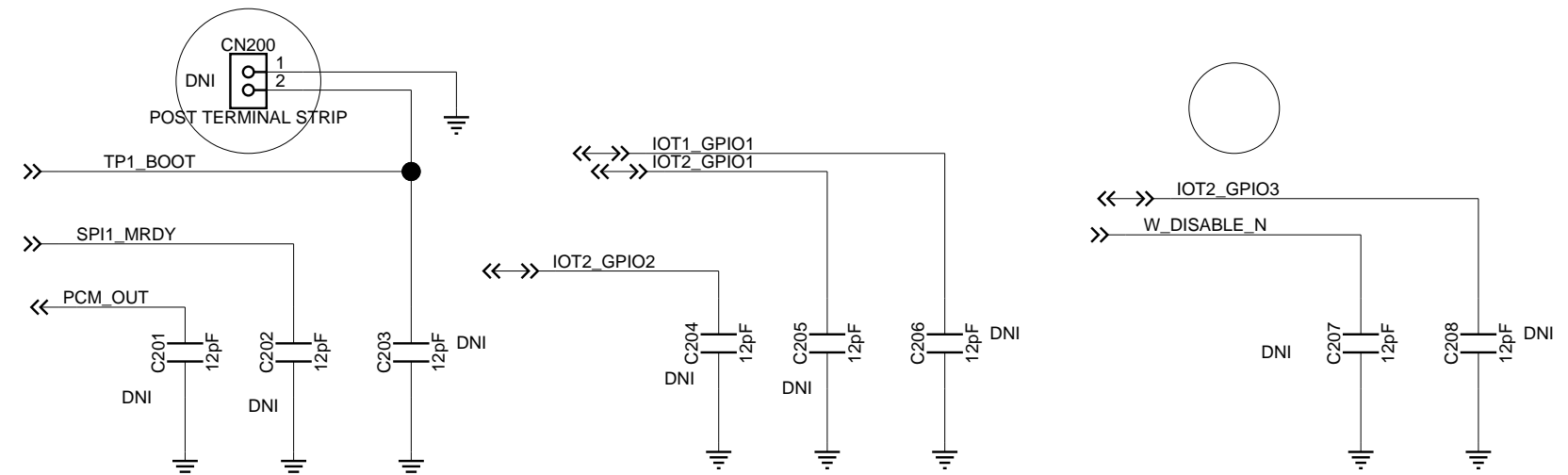
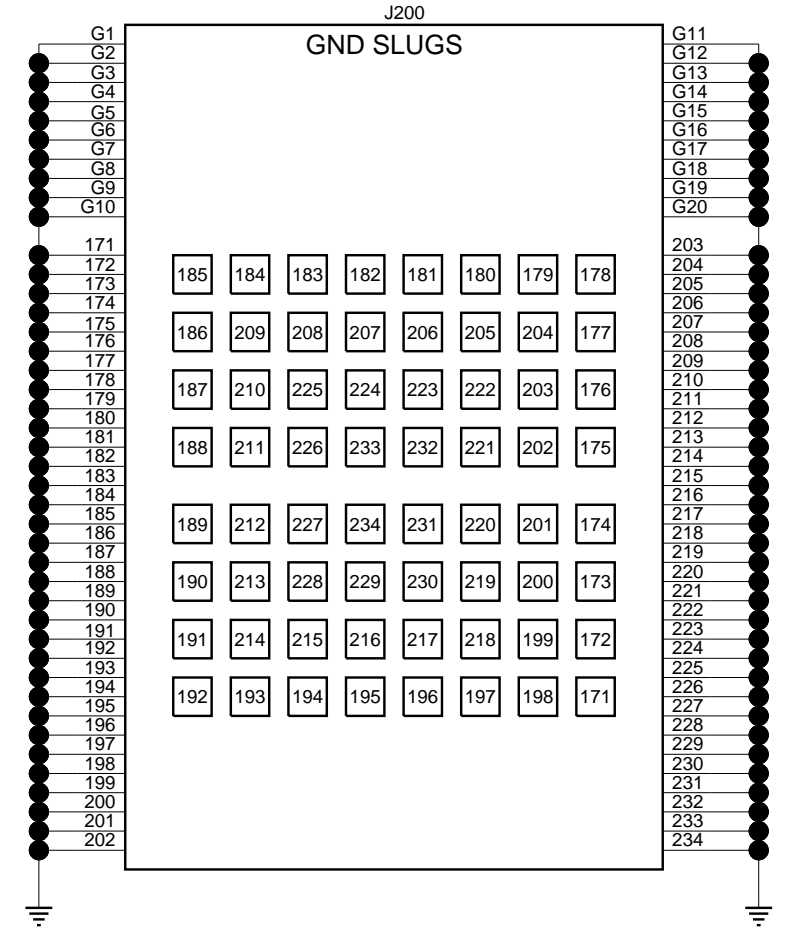
# OUTER RING



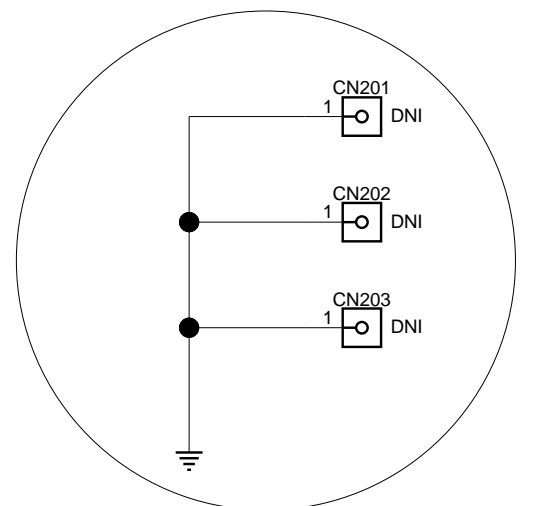
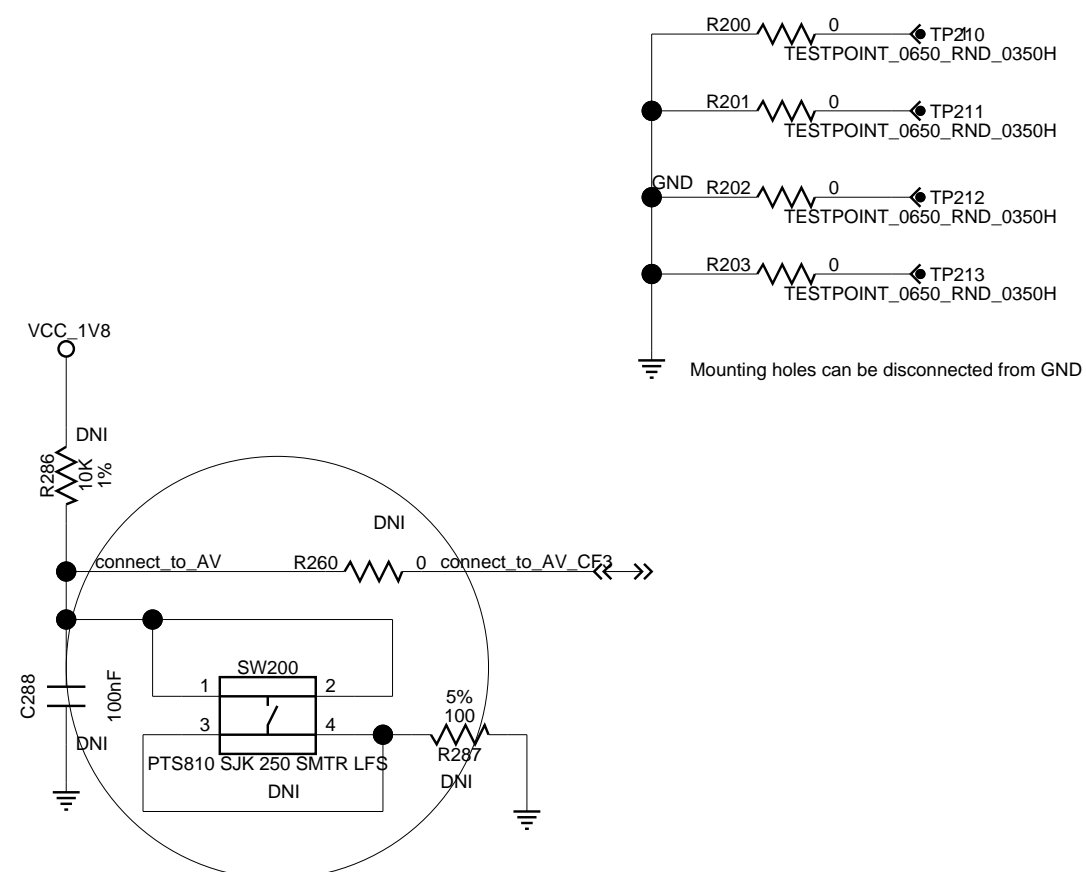
# JTAG



# GROUND SLUG



# Mounting Holes



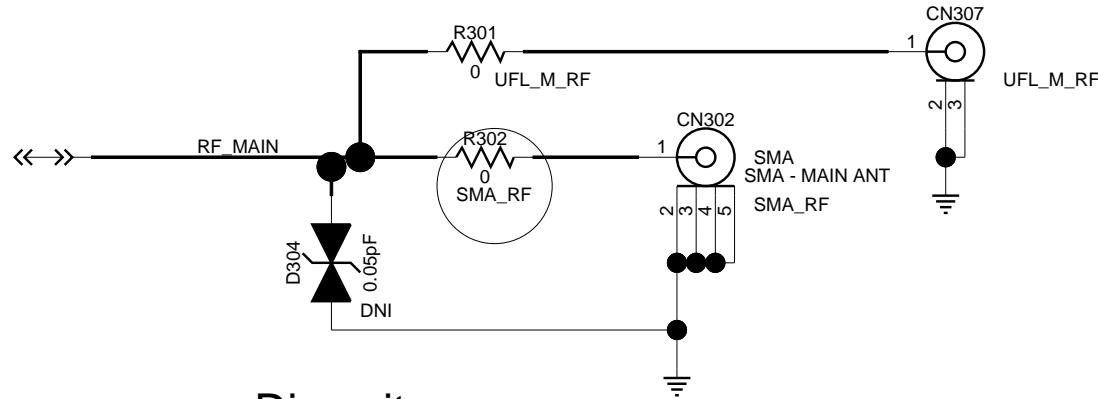
This document contains information which is proprietary and confidential to Sierra Wireless Inc. Disclosure to Persons other than the officers, employees, agents or subcontractors of the company or licensee of this document without the prior written permission of Sierra Wireless Inc. is strictly prohibited.  
Copyright (C) 2014



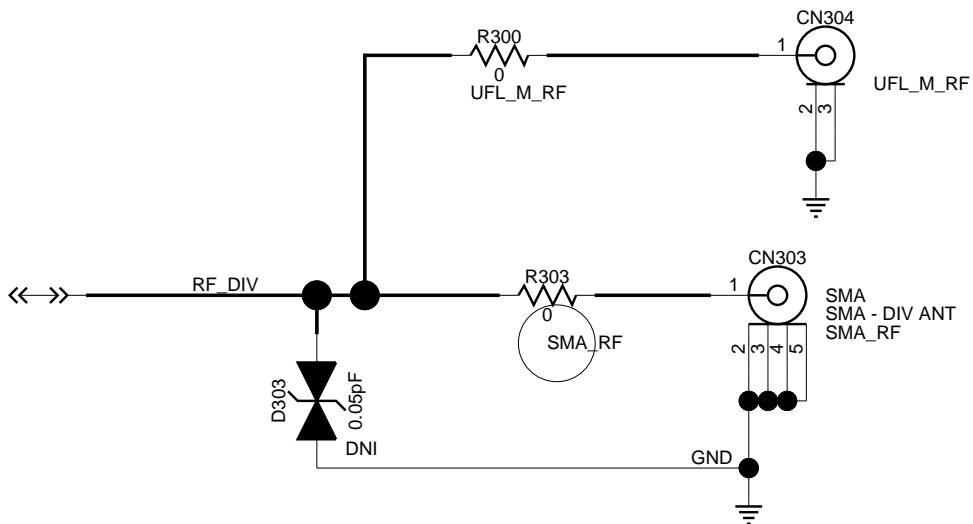
PROJECT	see P1
SCHEMATIC	2500905

SITE See P1 LEAD ENGINEER	
REV SCH See page 1	REV PCB See P1
DATE/TIME 06-11-2015_11:53 PAGE 2 OF 15	

MAIN CF3 Socket  
Main Antenna

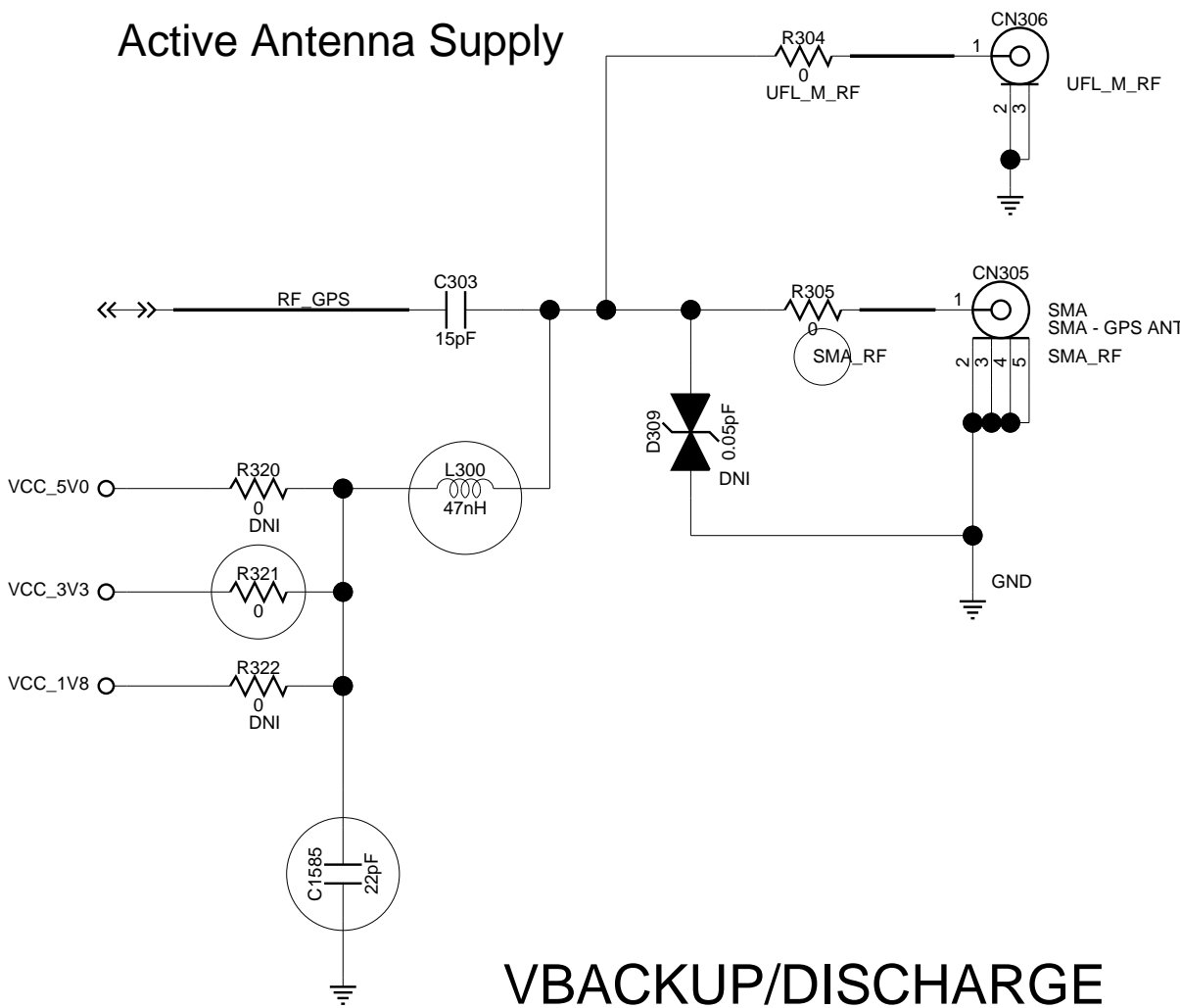


Diversity

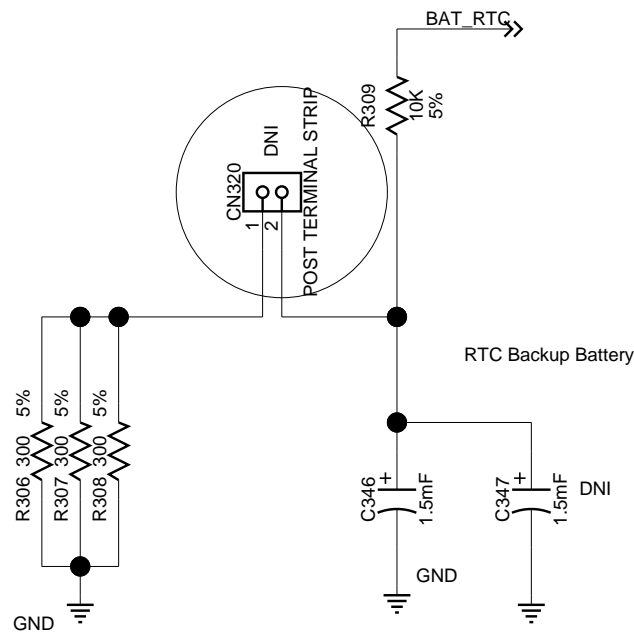


GPS

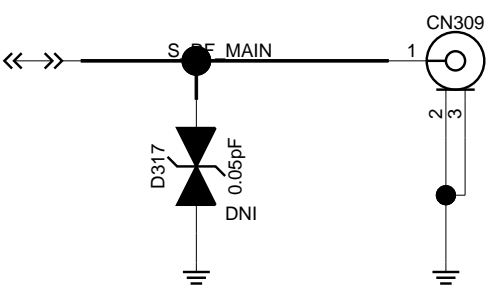
Active Antenna Supply



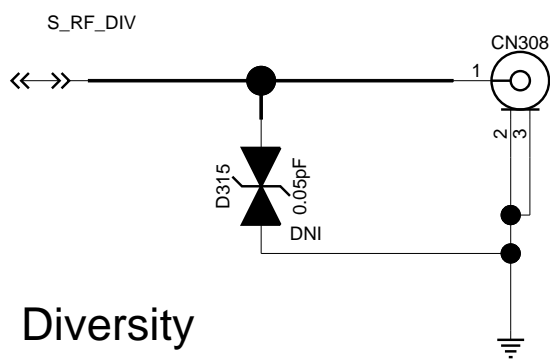
VBACKUP/DISCHARGE



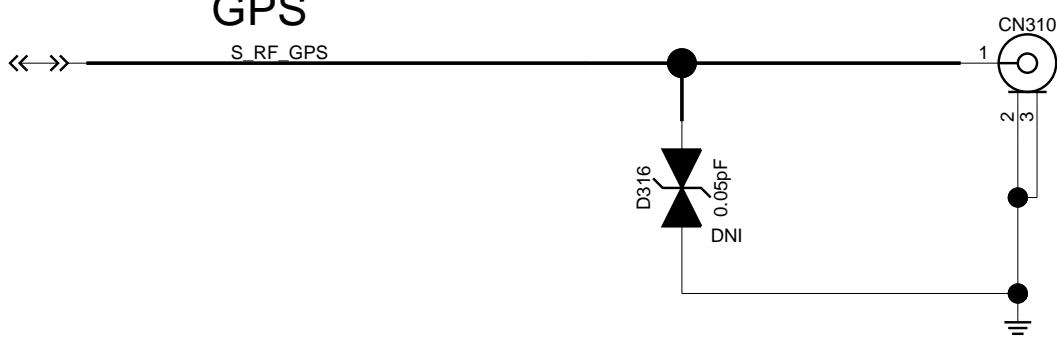
SECONDARY CF3 Socket



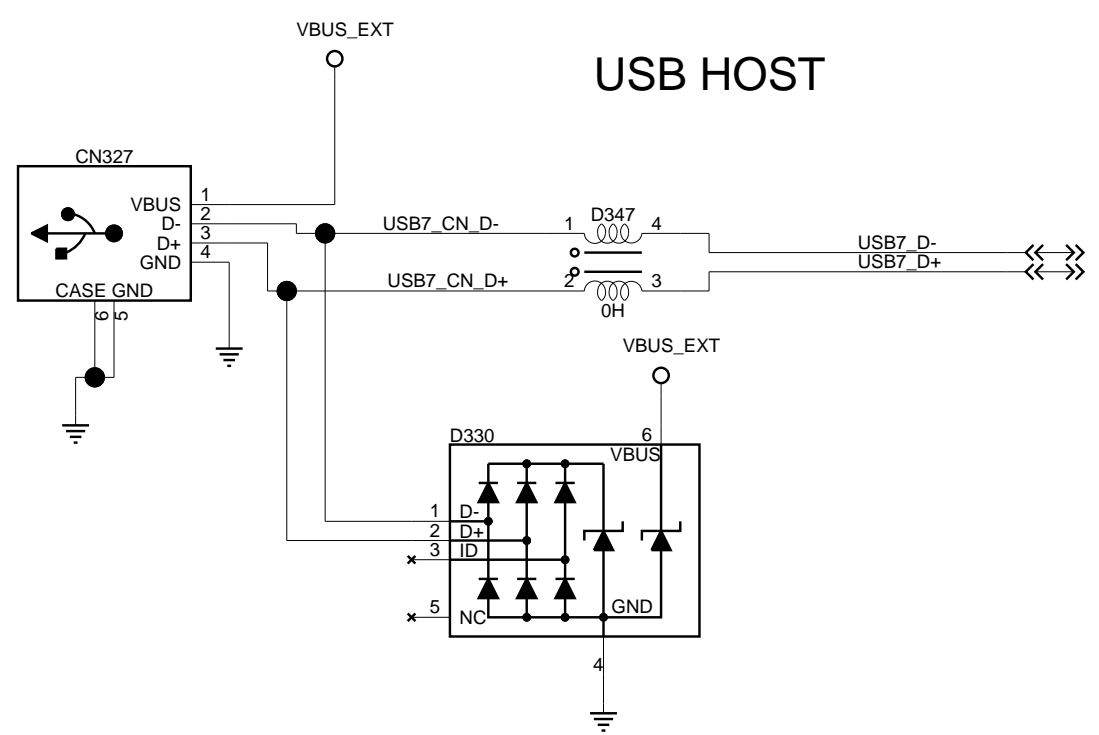
Main Antenna



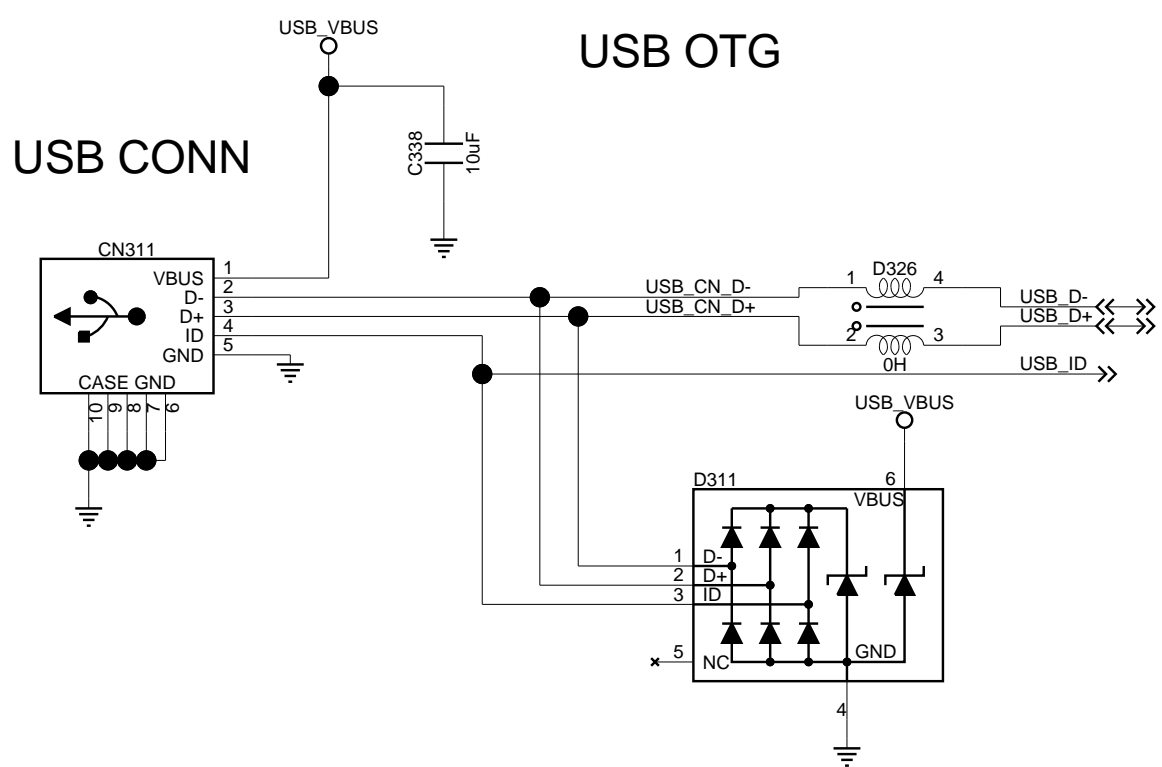
GPS



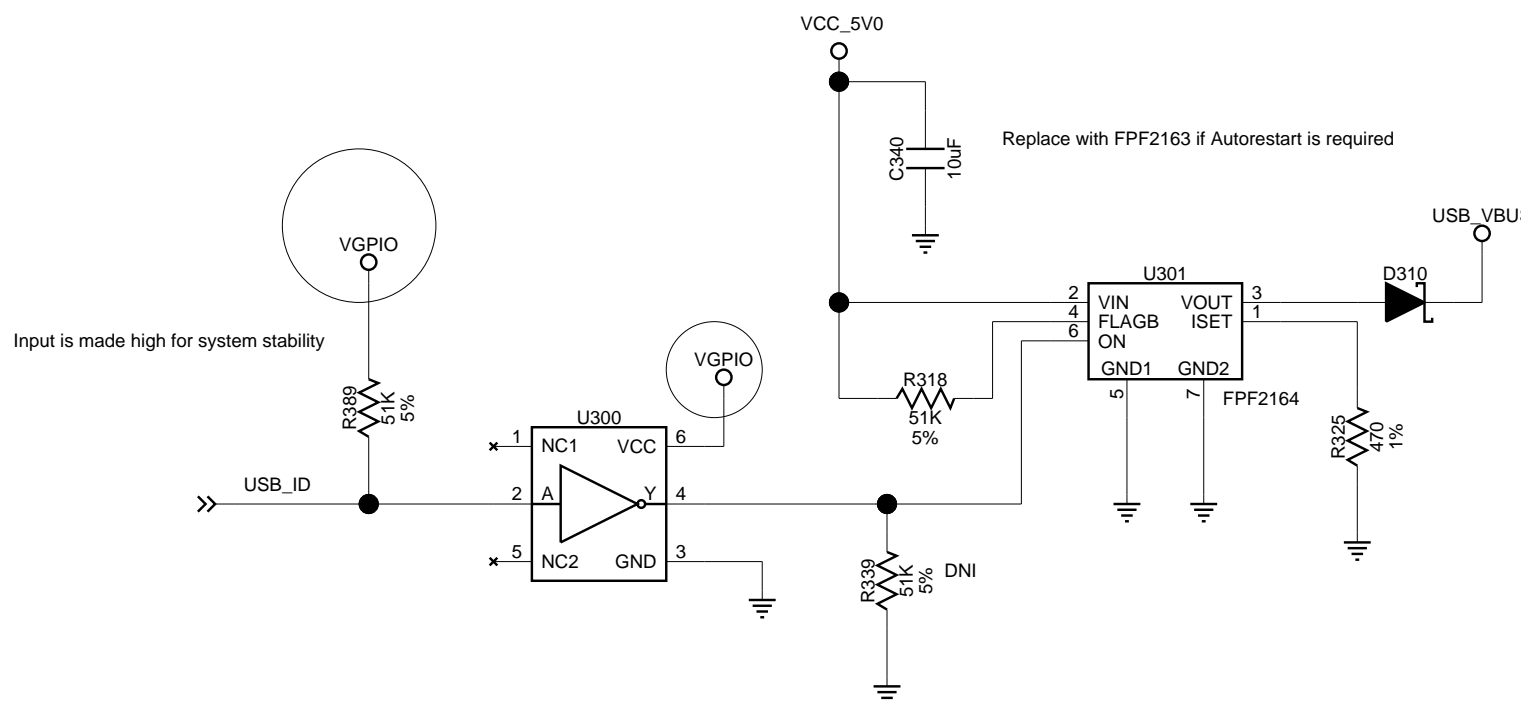
USB HOST



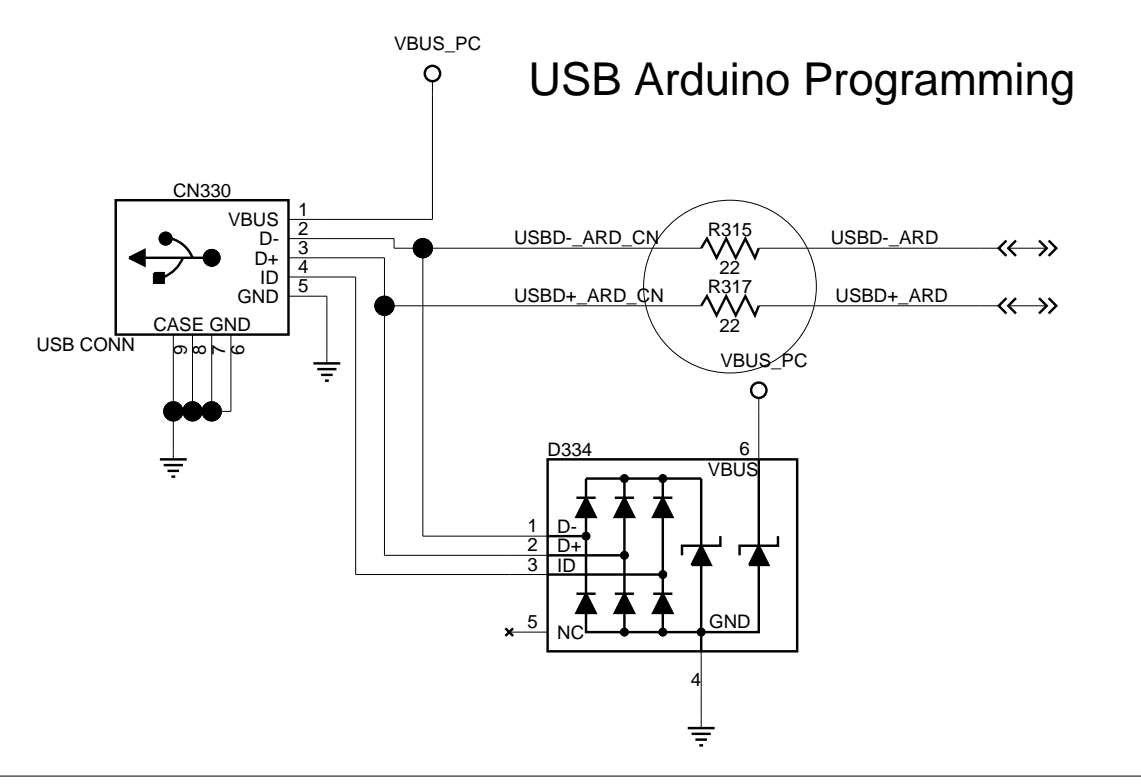
USB OTG



USB CONN

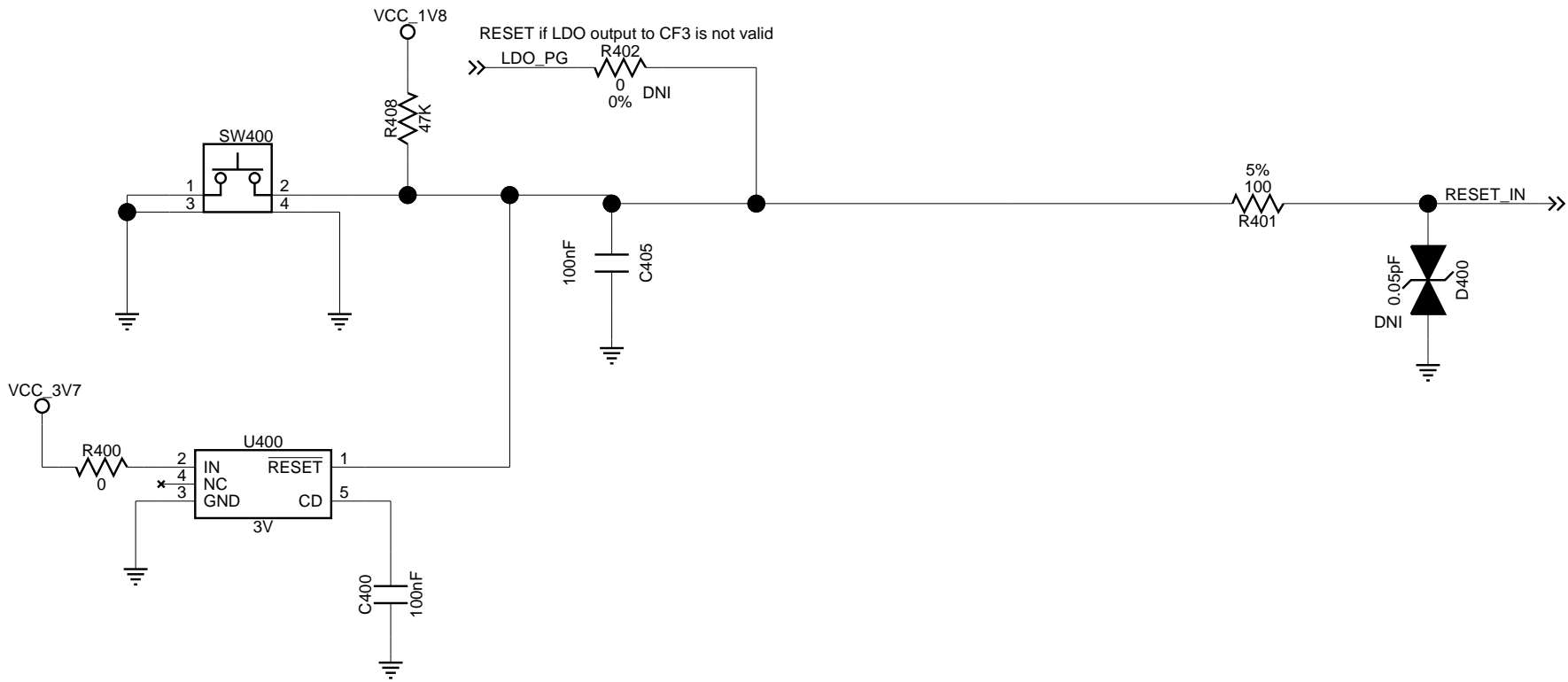


USB Arduino Programming

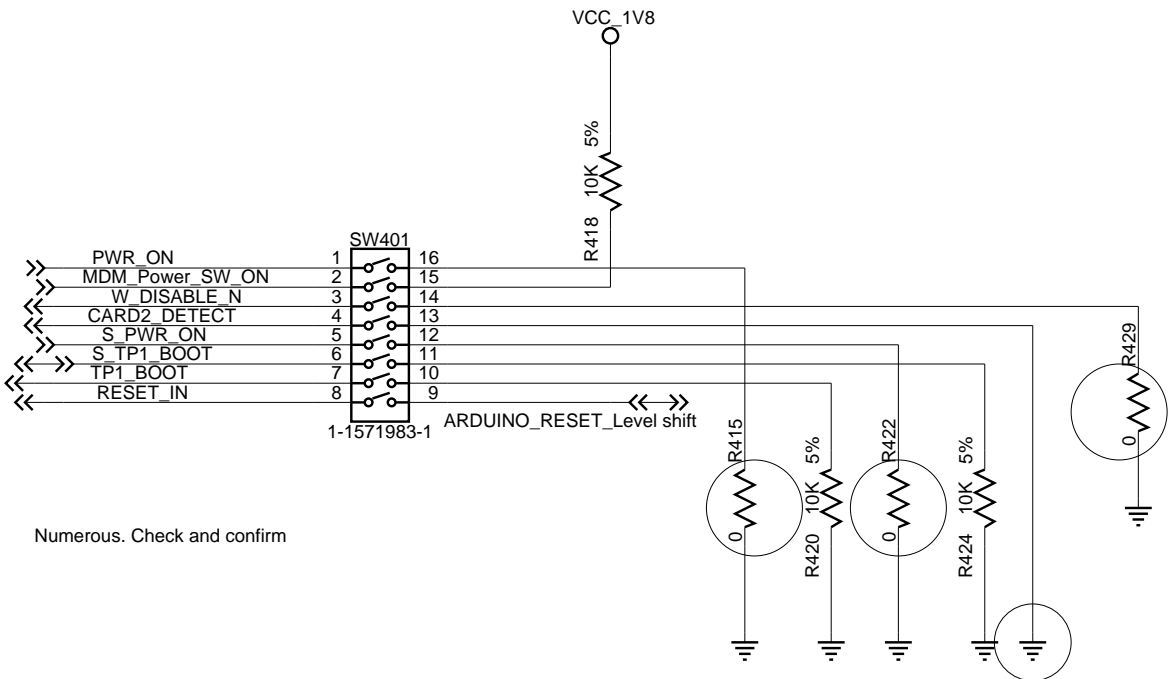


OPHW Platform RESET

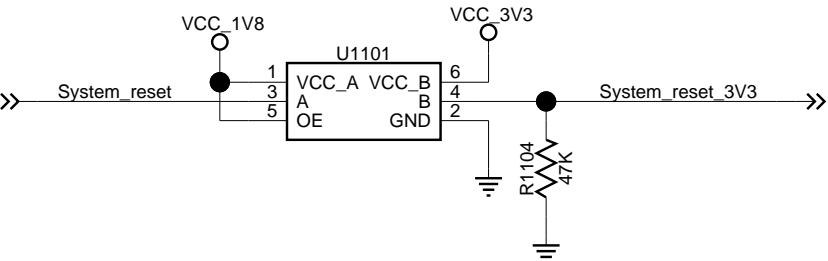
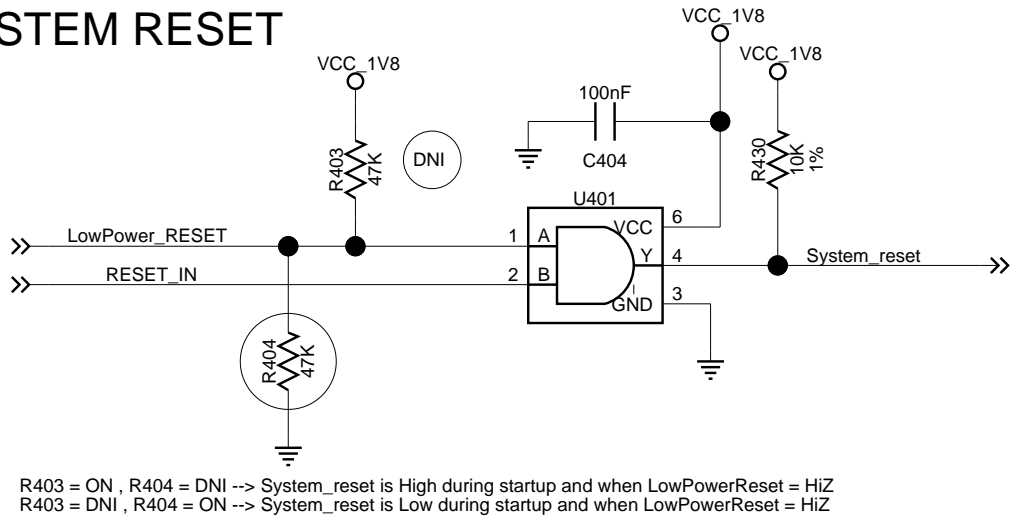
Jumper for HL only. Allow Arduino reset button to reset HL



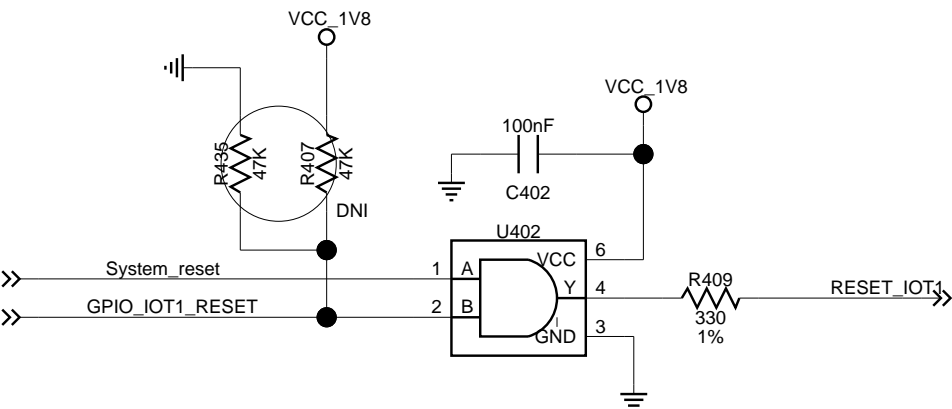
CONTRL SWITCH



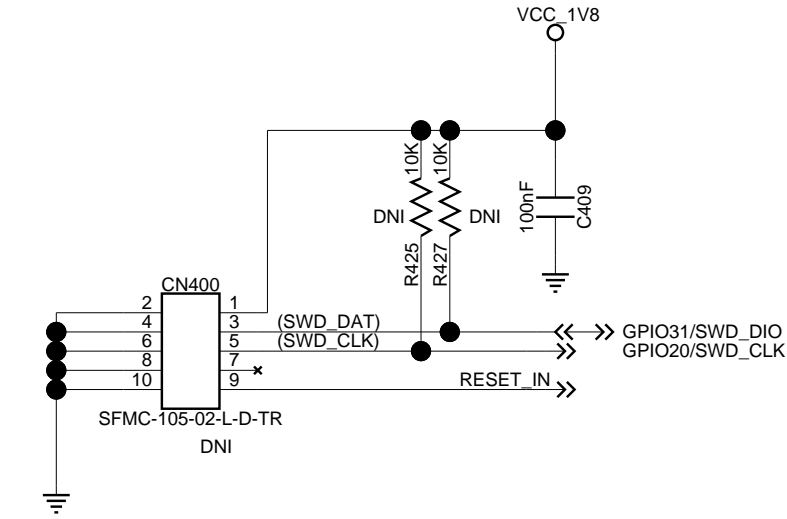
SYSTEM RESET



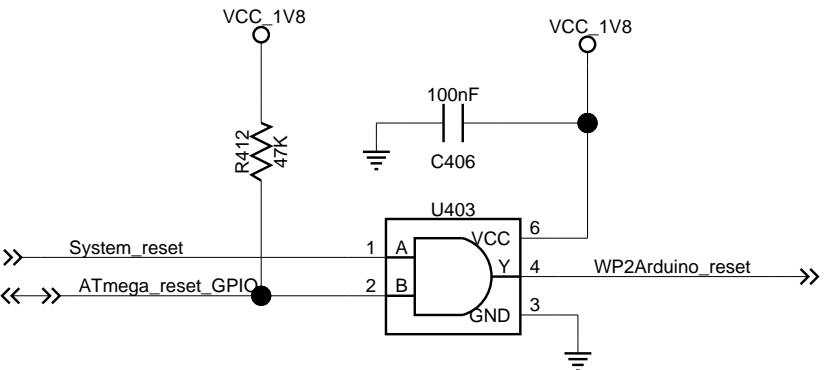
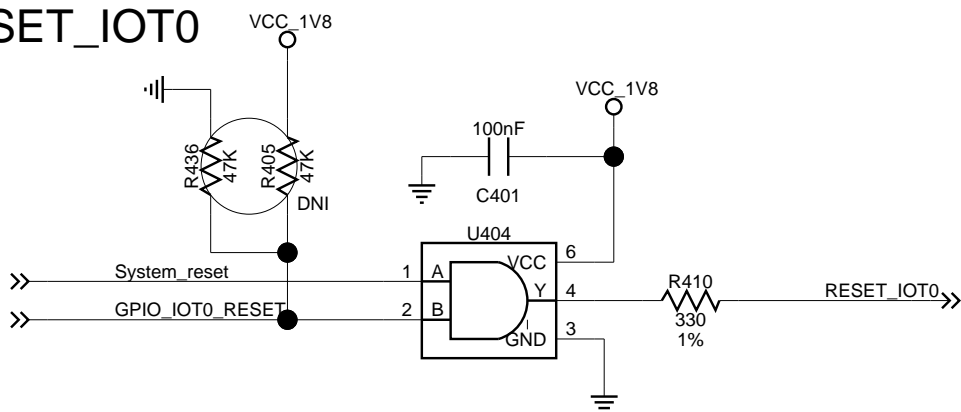
RESET\_IOT1



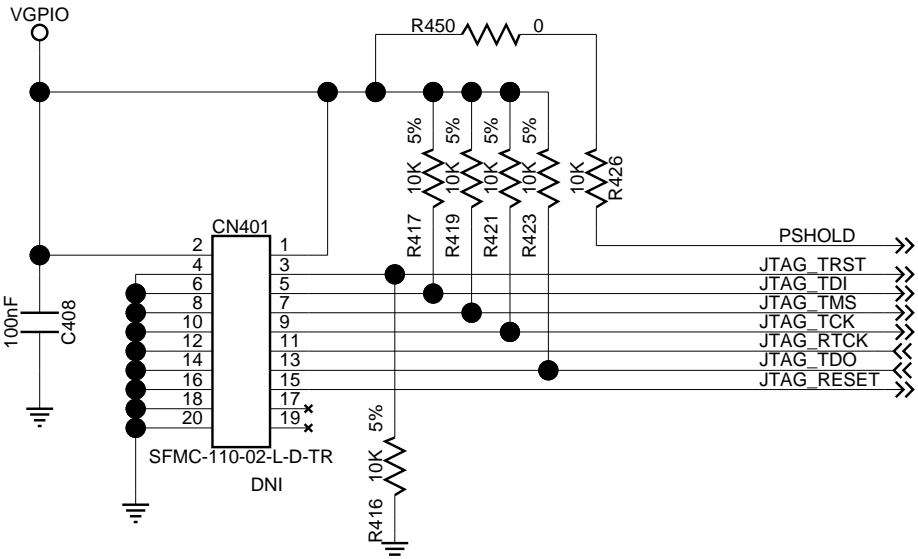
uC DEBUG



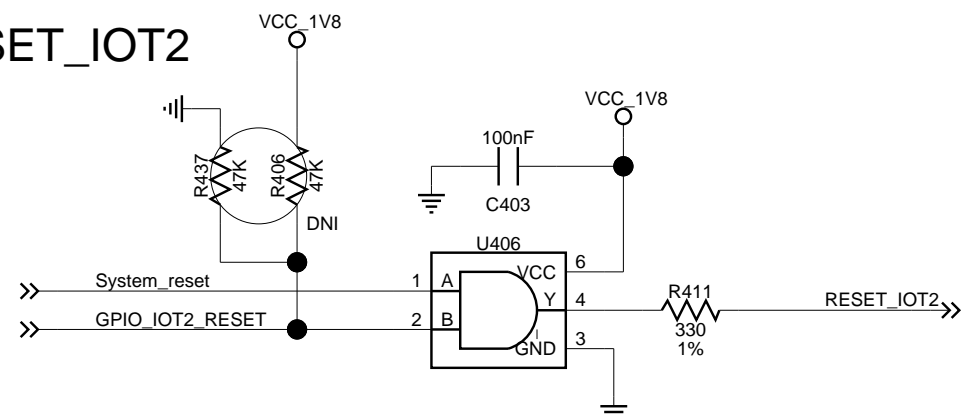
RESET\_IOT0



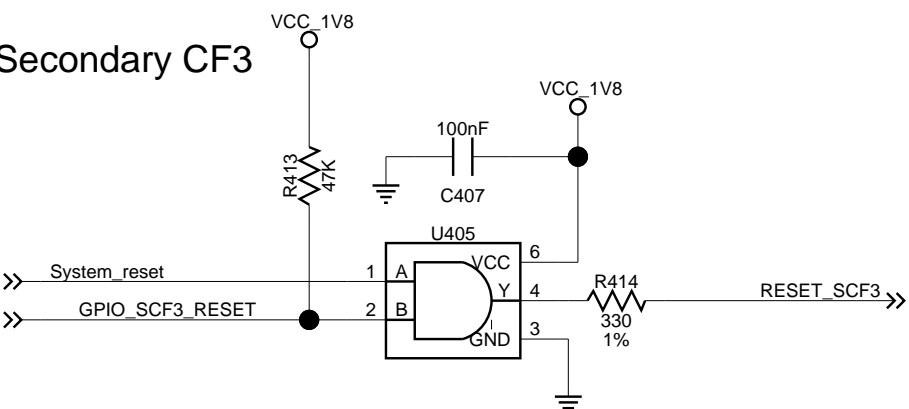
JTAG



RESET\_IOT2



RESET\_Secondary CF3

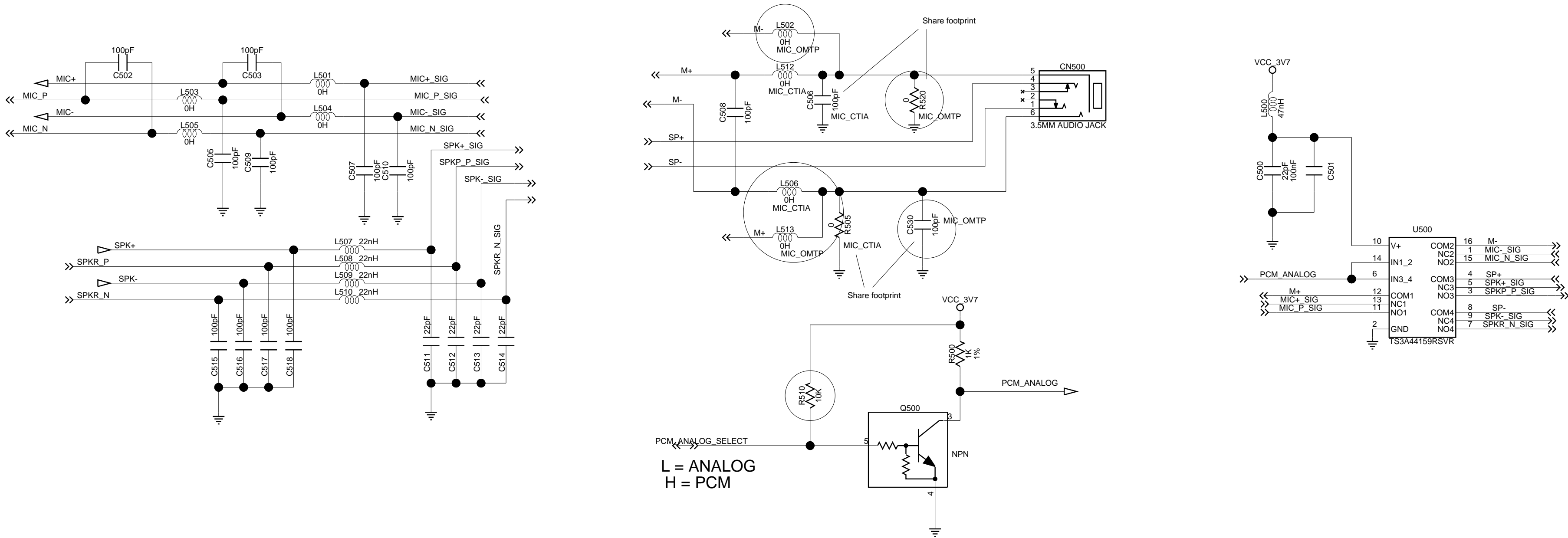


This document contains information which is proprietary and confidential to Sierra Wireless Inc. Disclosure to Persons other than the officers, employees, agent or subcontractors of the company or licensee of this document without the prior written permission of Sierra Wireless Inc. is strictly prohibited. Copyright (C) 2014

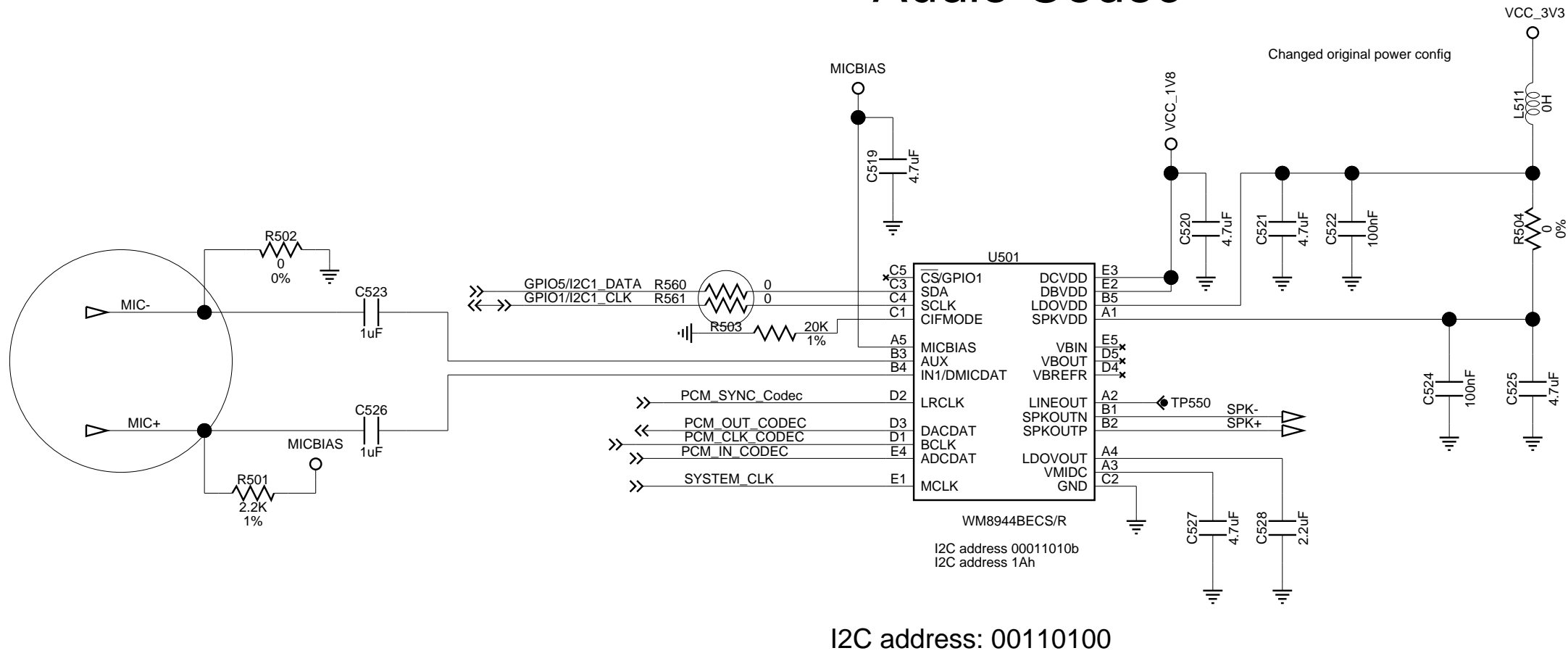
		<b>SIERRA WIRELESS™</b>	
PROJECT	see P1	DATE/TIME	06-11-2015_11:00
SCHEMATIC	2500905	PAGE	4 OF 15

SITE	see P1
LEAD ENGINEER	see P1
REV SCH	See P1
REV PCB	See P1

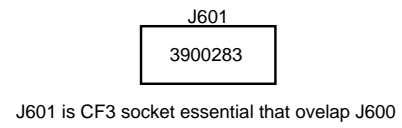
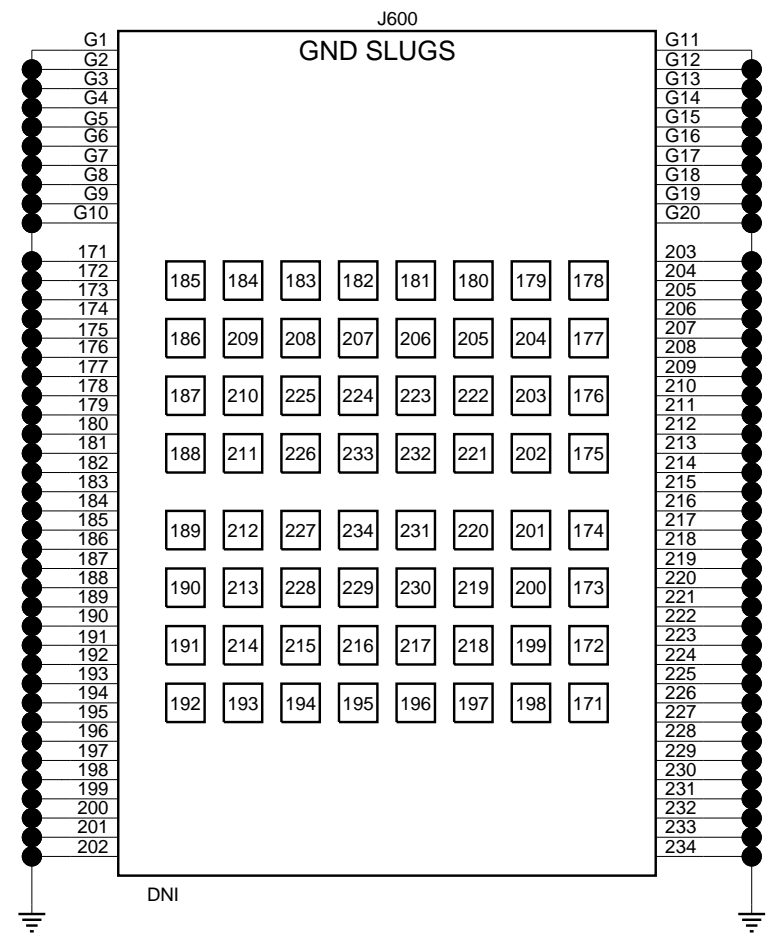
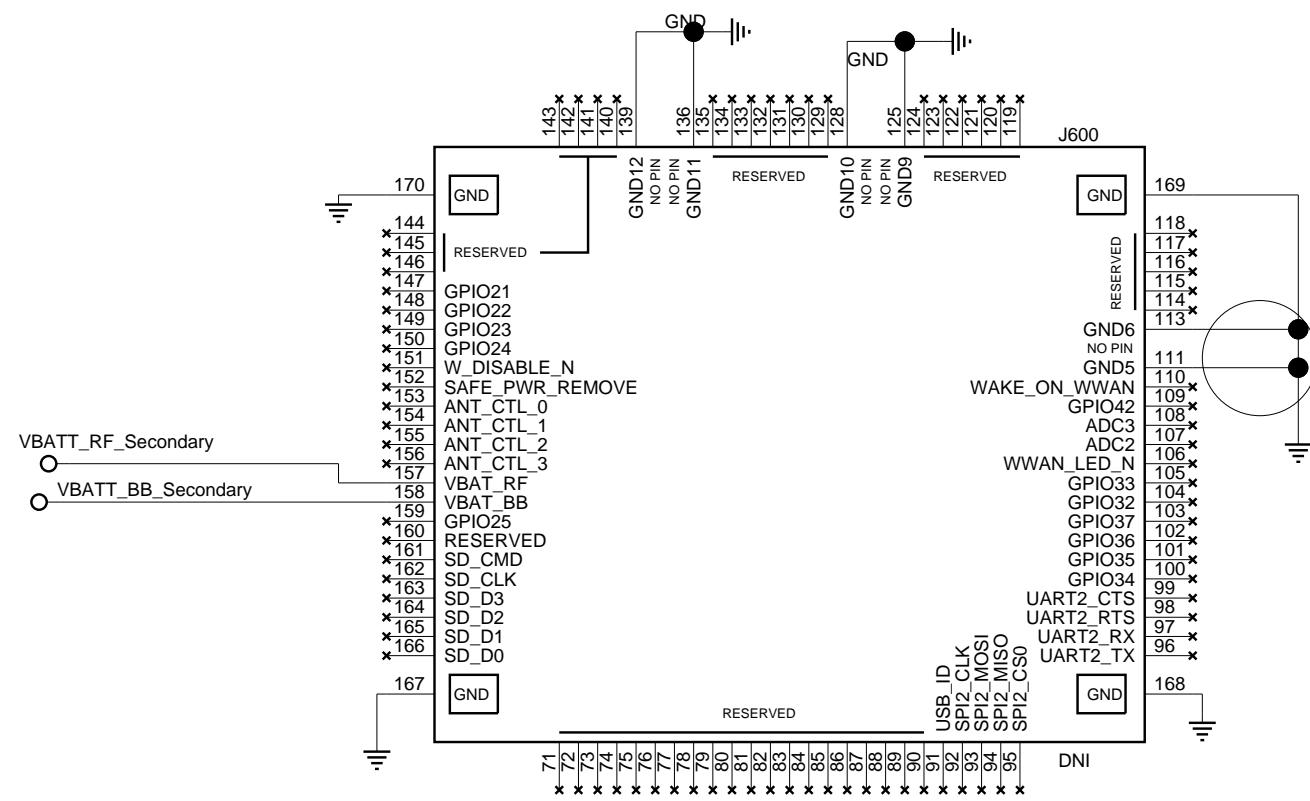
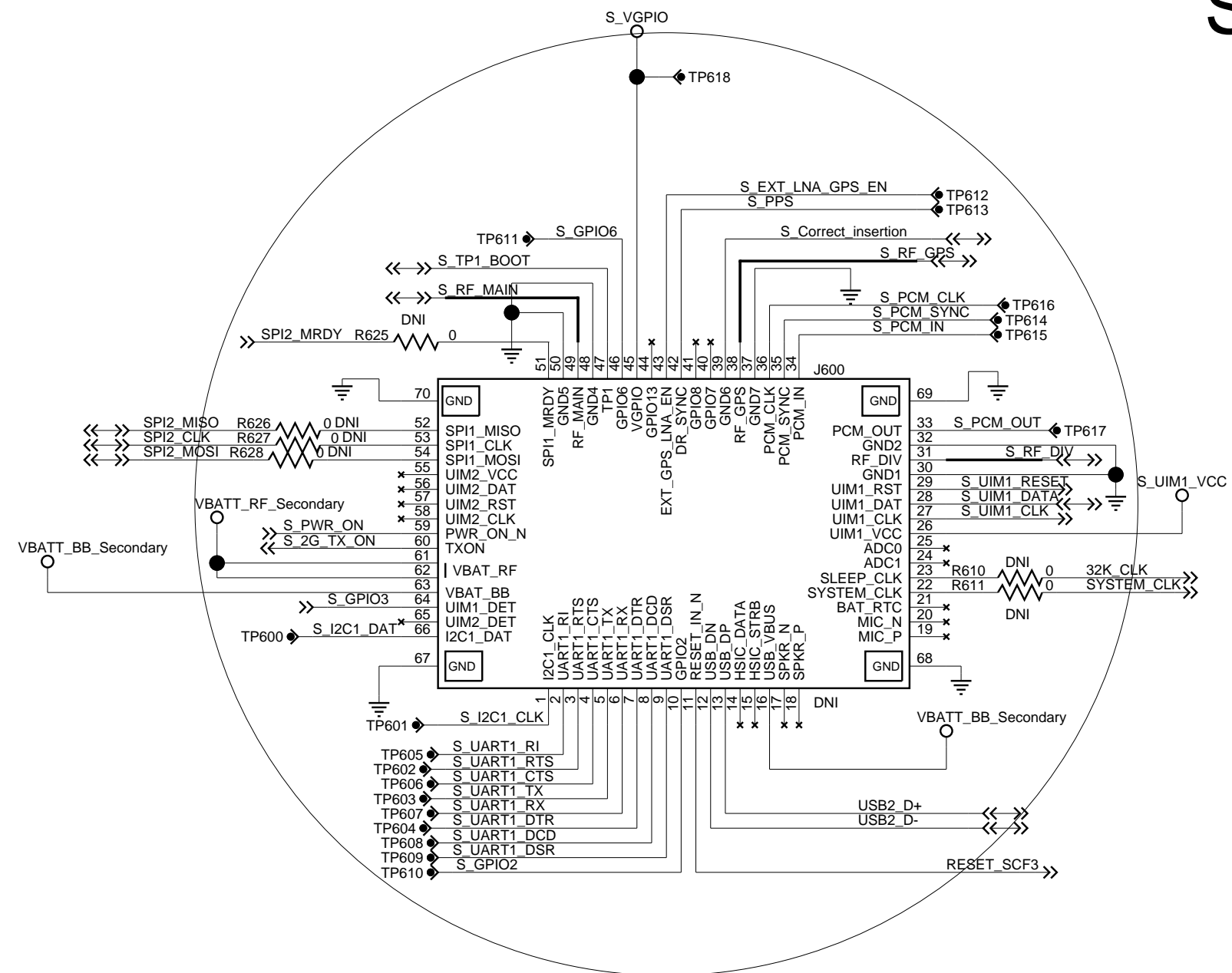
# Audio Source Selection



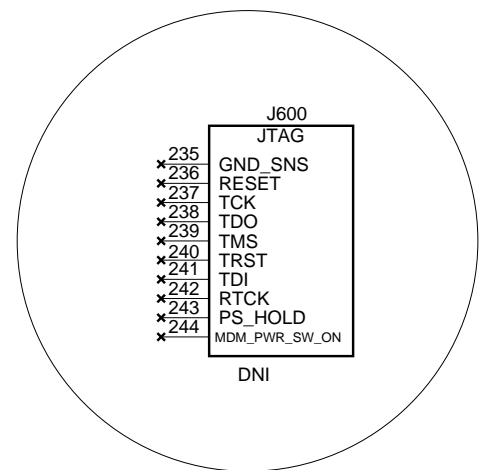
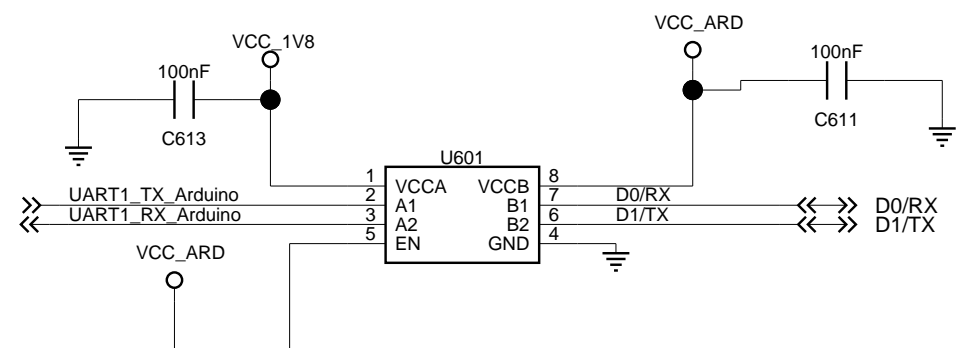
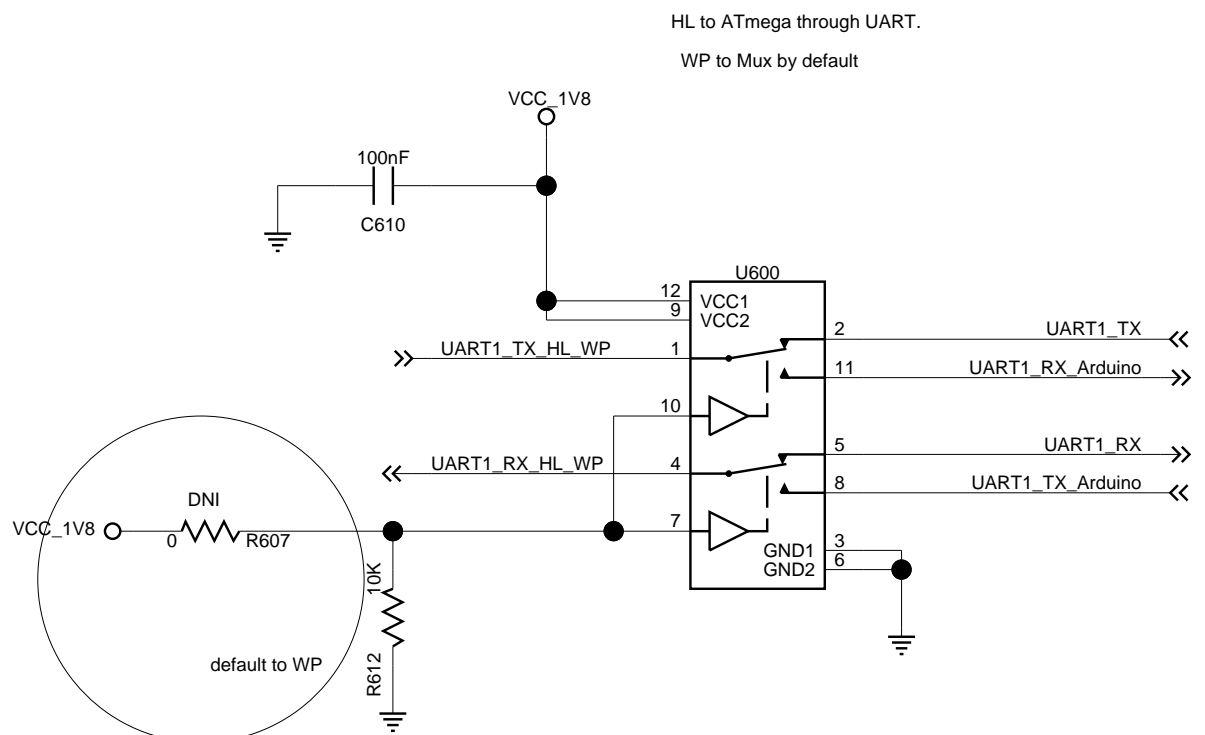
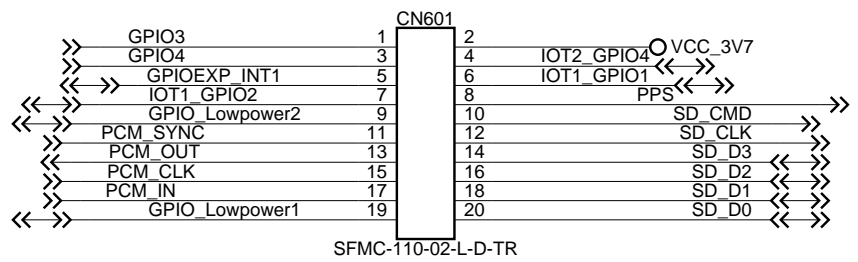
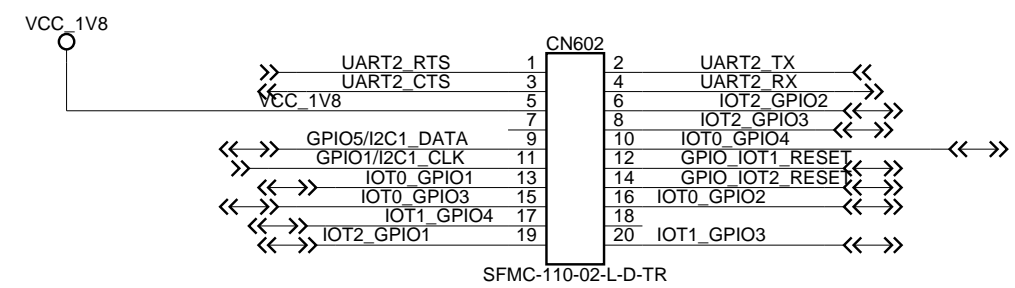
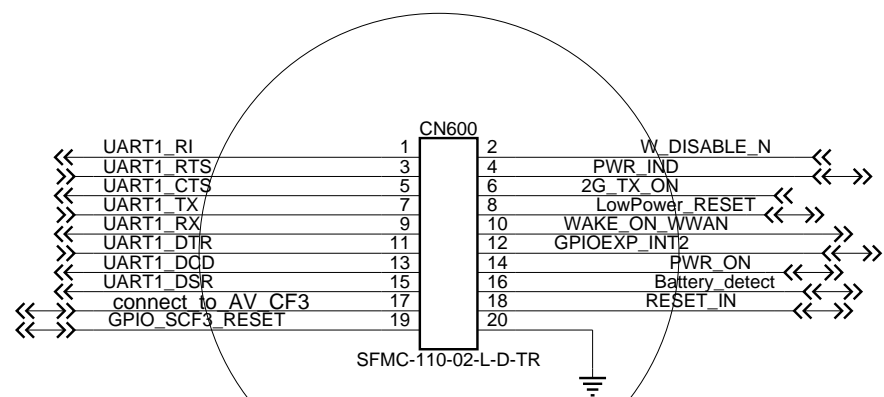
# Audio Codec



## Secondary LGA SOCKET



## Additional Hardware Pins



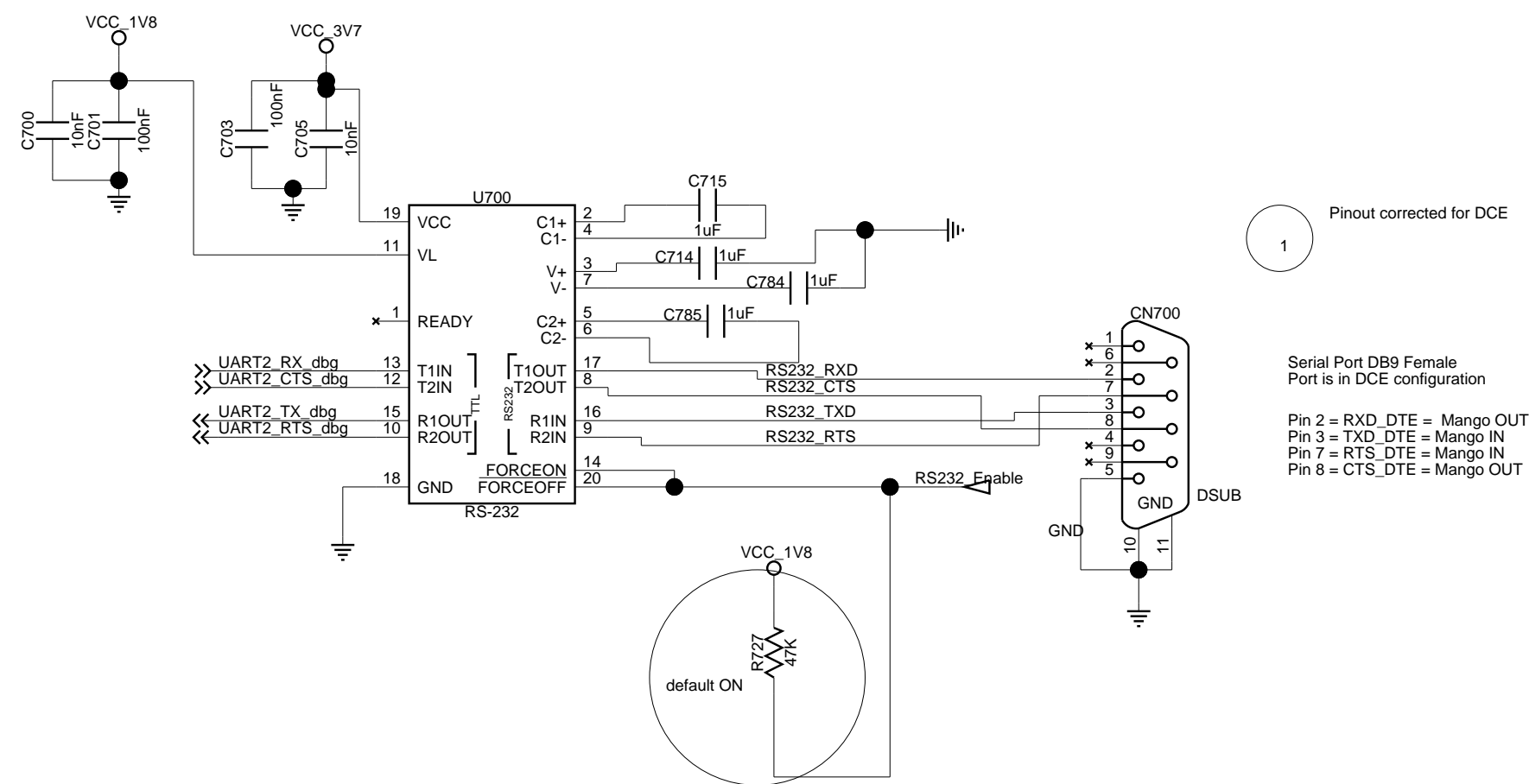
This document contains information which is proprietary and confidential to Sierra Wireless Inc. Disclosure to Persons other than the officers, employees, agents or subcontractors of the company or licensee of this document without the prior written permission of Sierra Wireless Inc. is strictly prohibited.  
Copyright (C) 2014



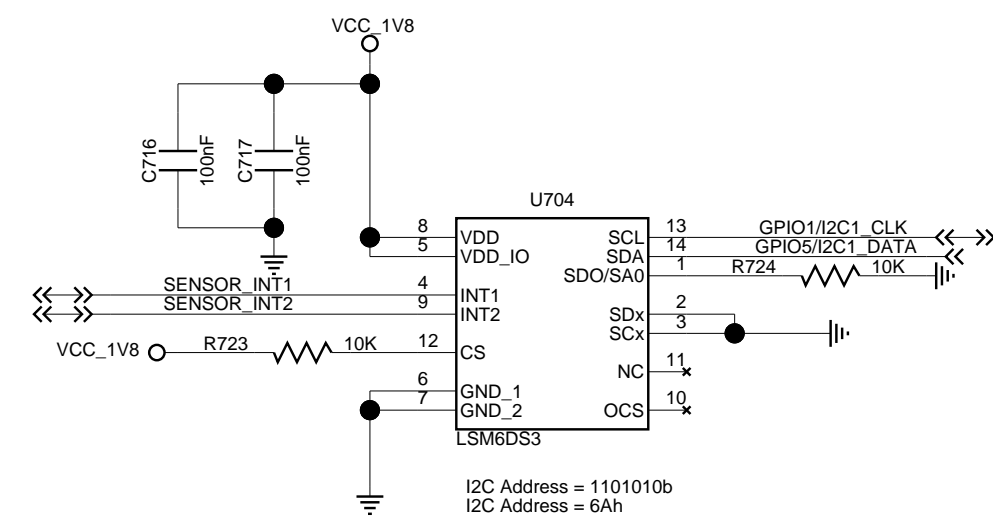
PROJECT	see P1
SCHEMATIC	2500905

SITE	
see P1	
LEAD ENGINEER	
see P1	
REV SCH	REV PCB
See P1	See P1
DATE/TIME	
07-10-2015 14:31	
PAGE	
6 OF 15	

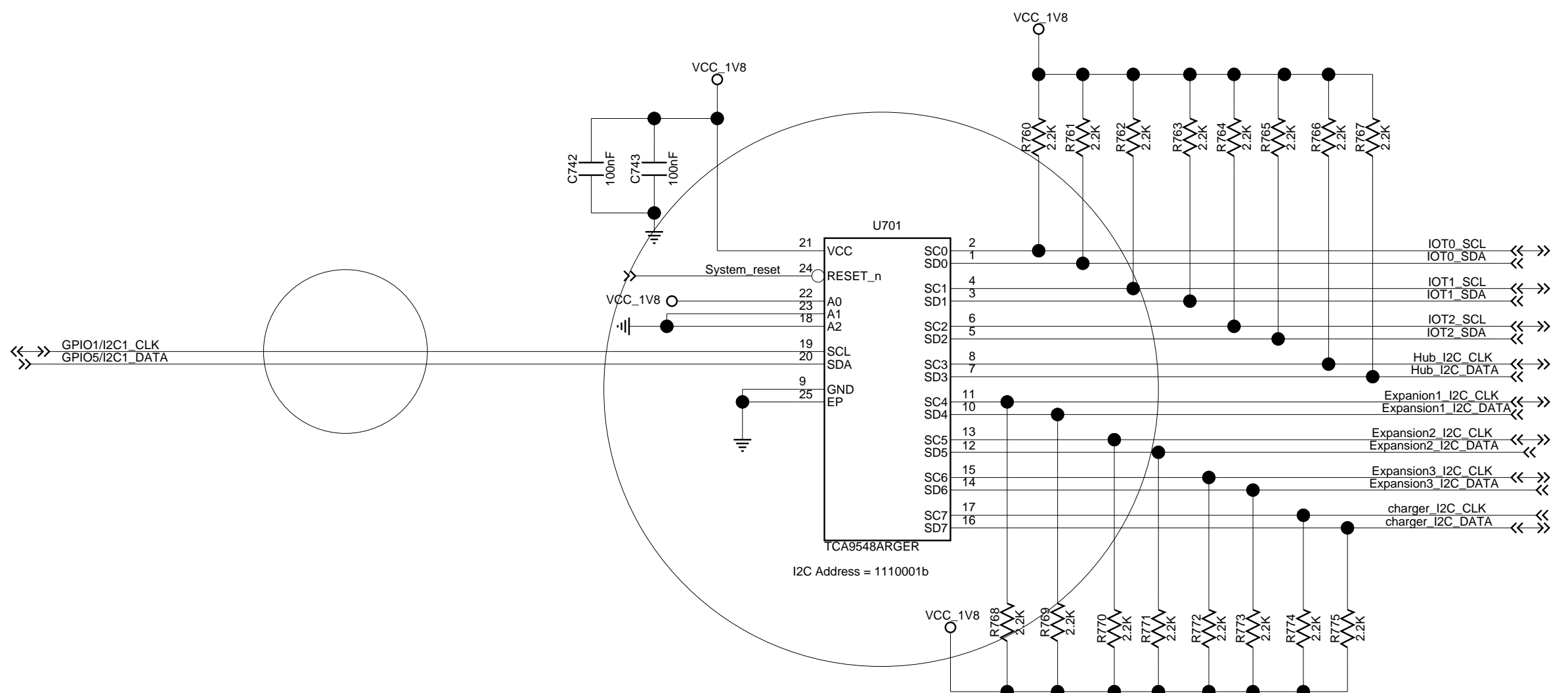
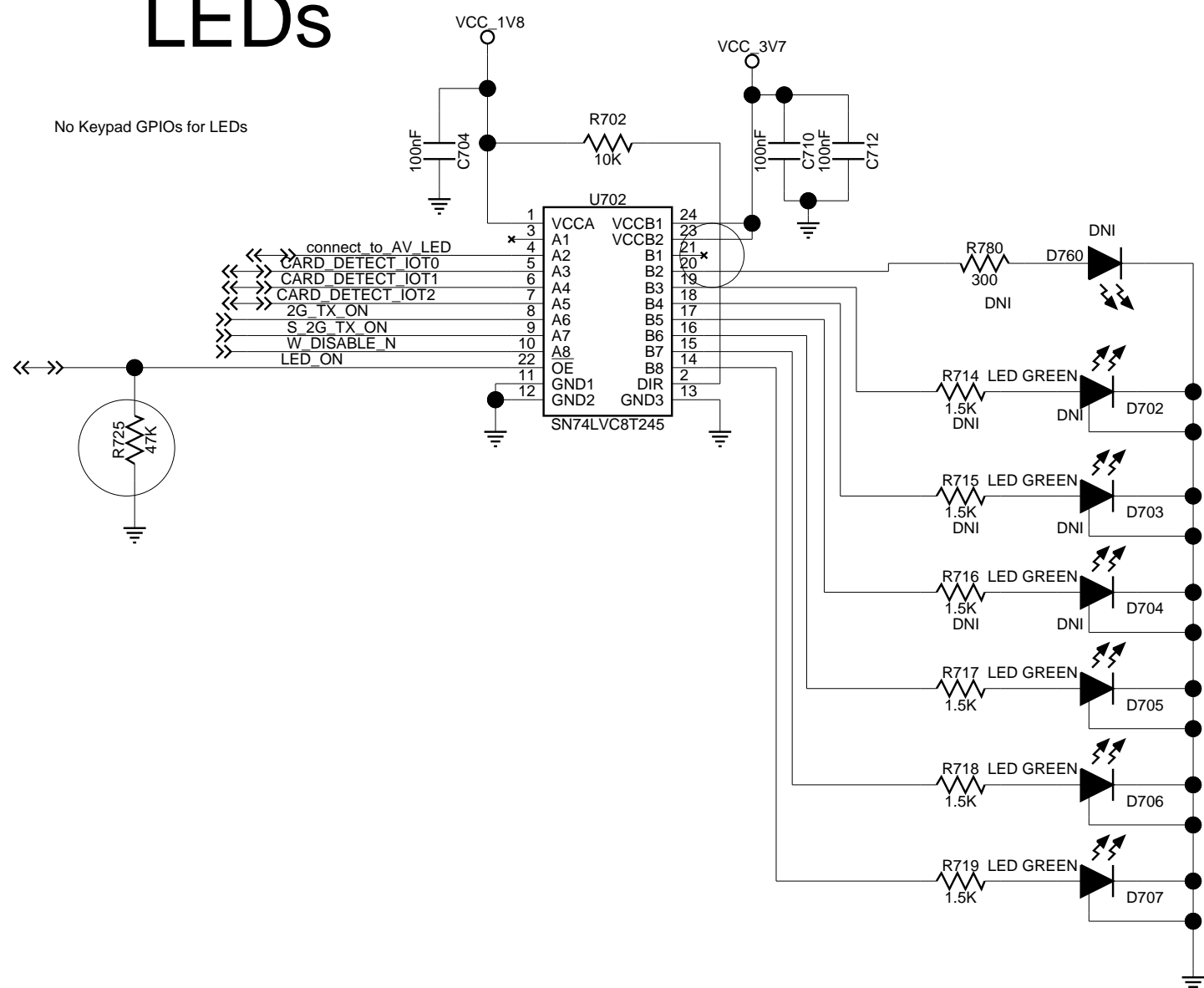
## UART (MAX 1Mbps)



## ACCELEROMETER AND GYROSCOPE



# LEDs



This document contains information which is proprietary and confidential to Sierra Wireless Inc. Disclosure to Persons other than the officers, employees, agents or subcontractors of the company or licensee of this document without the prior written permission of Sierra Wireless Inc. is strictly prohibited.

Copyright (C) 2014



PROJECT	see P1
SCHEMATIC	2500905

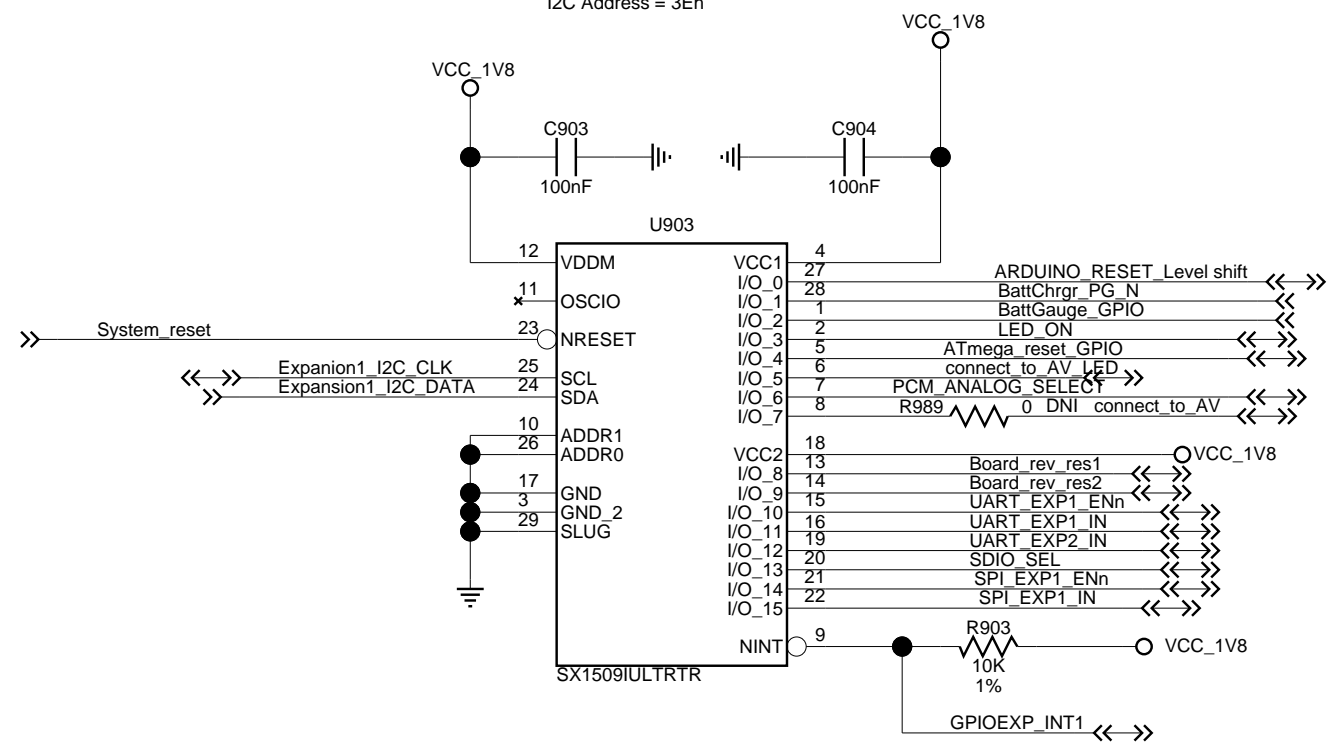
See P1	
HEAD ENGINEER	
See P1	
REV SCH	REV PCB
See P1	See P1





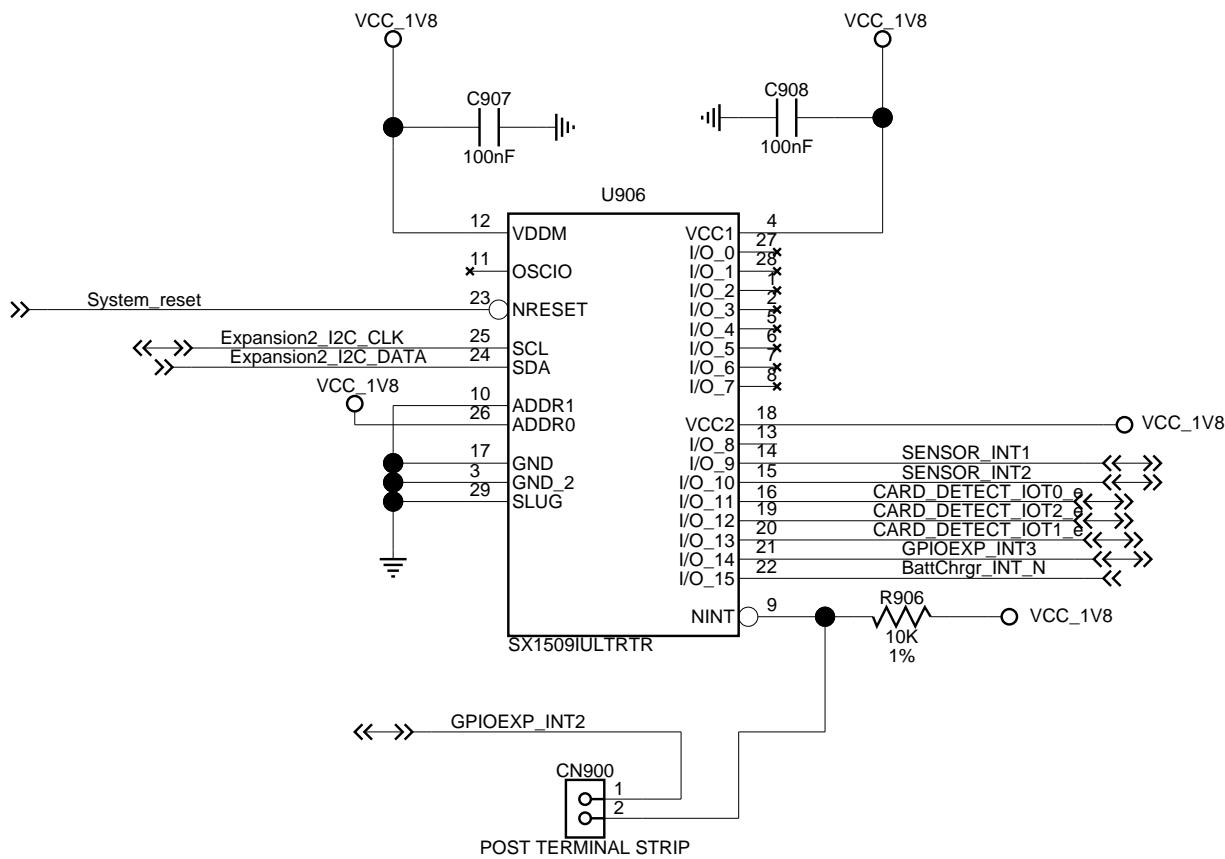
## GPIO Expander#1

I2C Address = 0111110b  
I2C Address = 3Eh



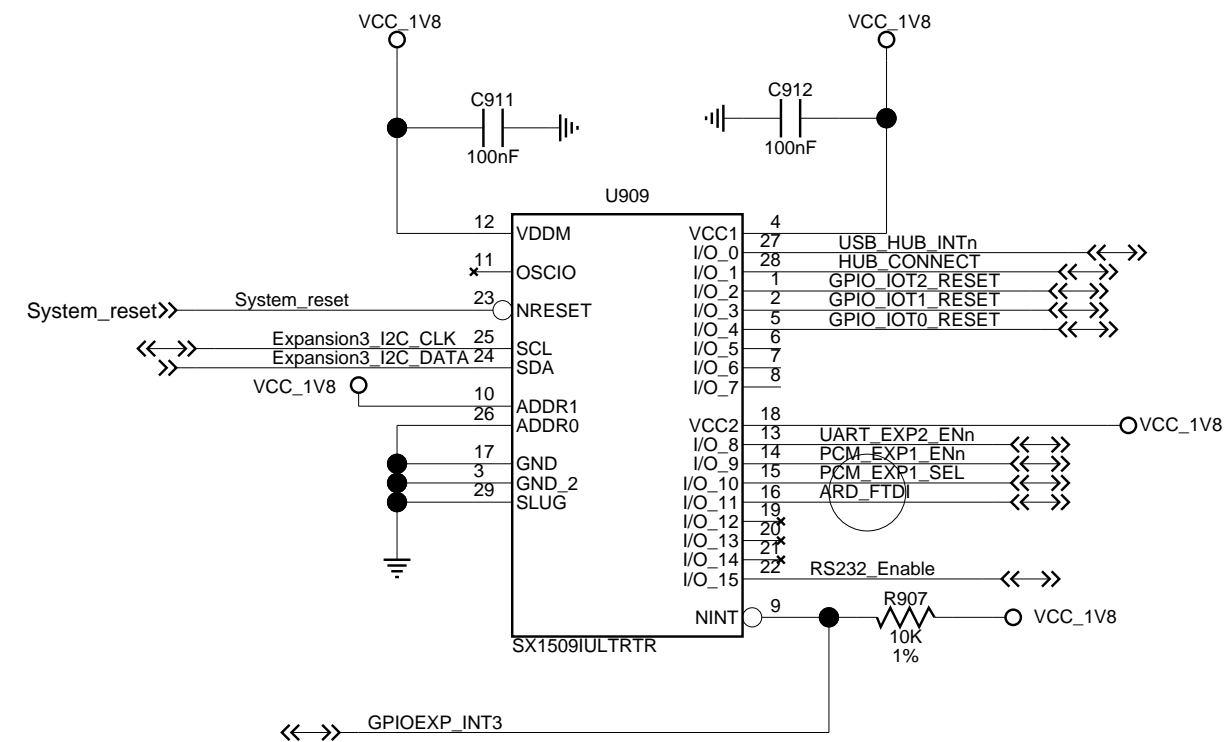
## GPIO Expander#2

I2C Address = 0111111b  
I2C Address = 3Fh



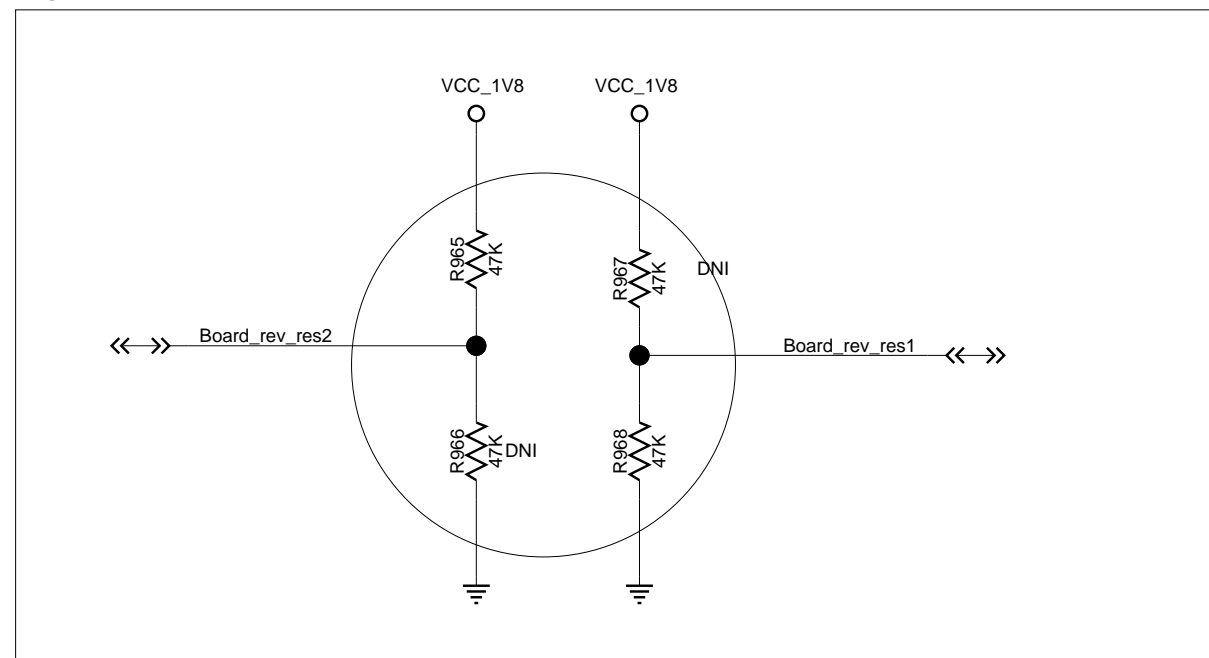
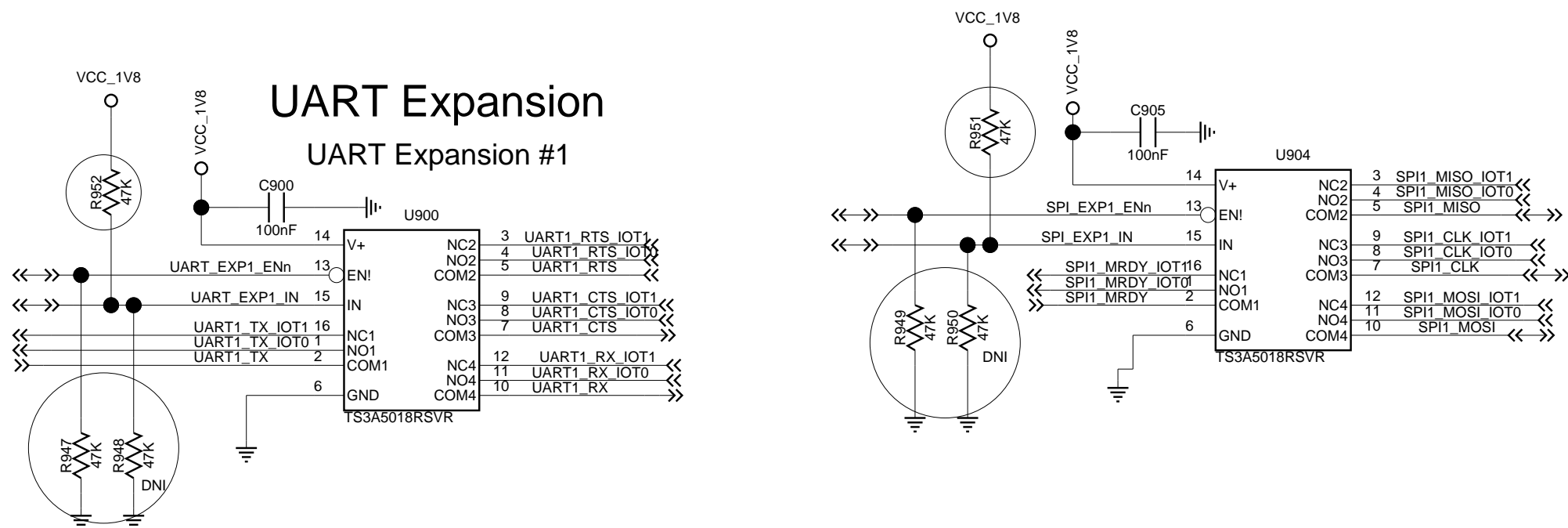
## GPIO Expander#3

I2C Address = 1110000b  
I2C Address = 70h



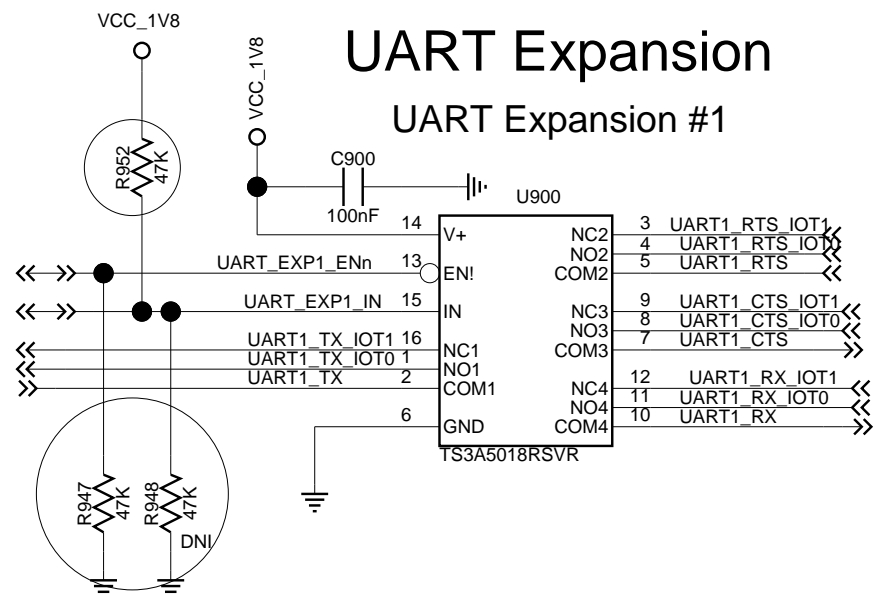
## SPI Expansion

I2C address: 0100010

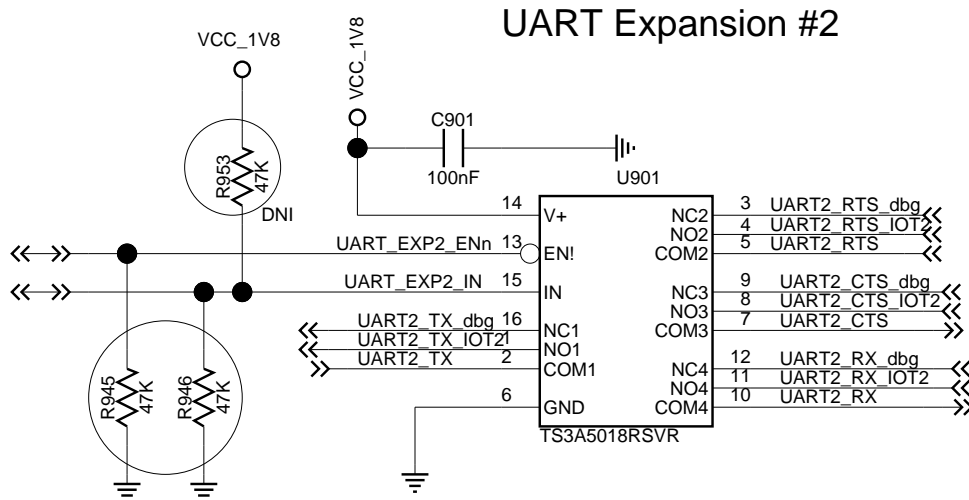


## UART Expansion

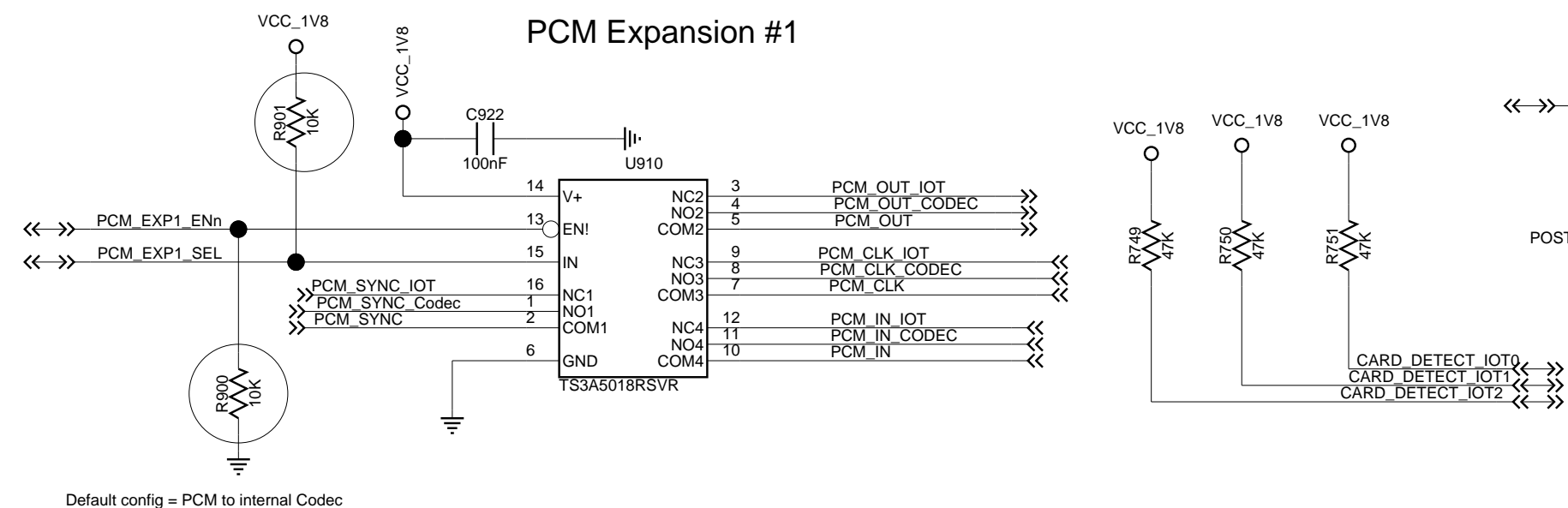
UART Expansion #1



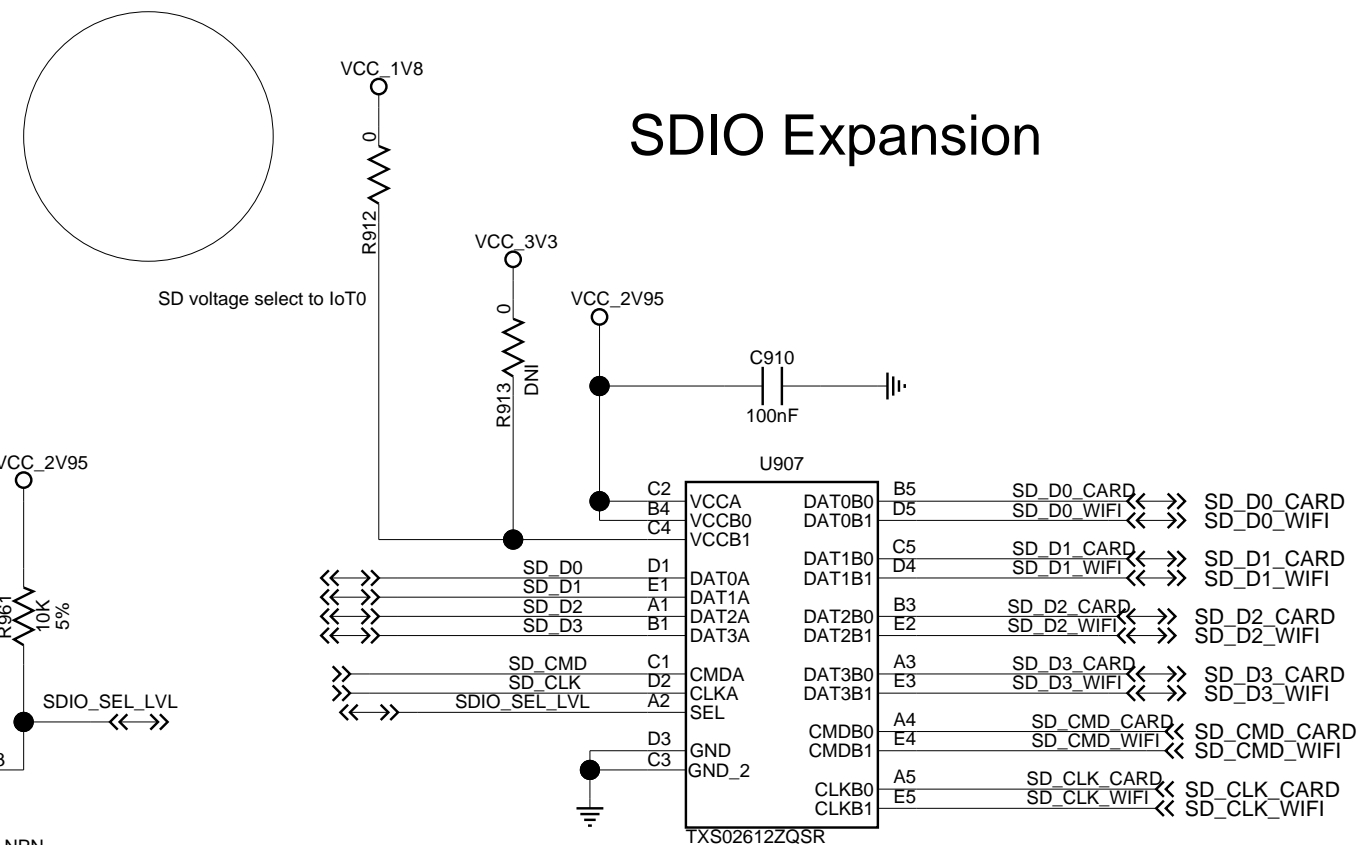
## UART Expansion #2



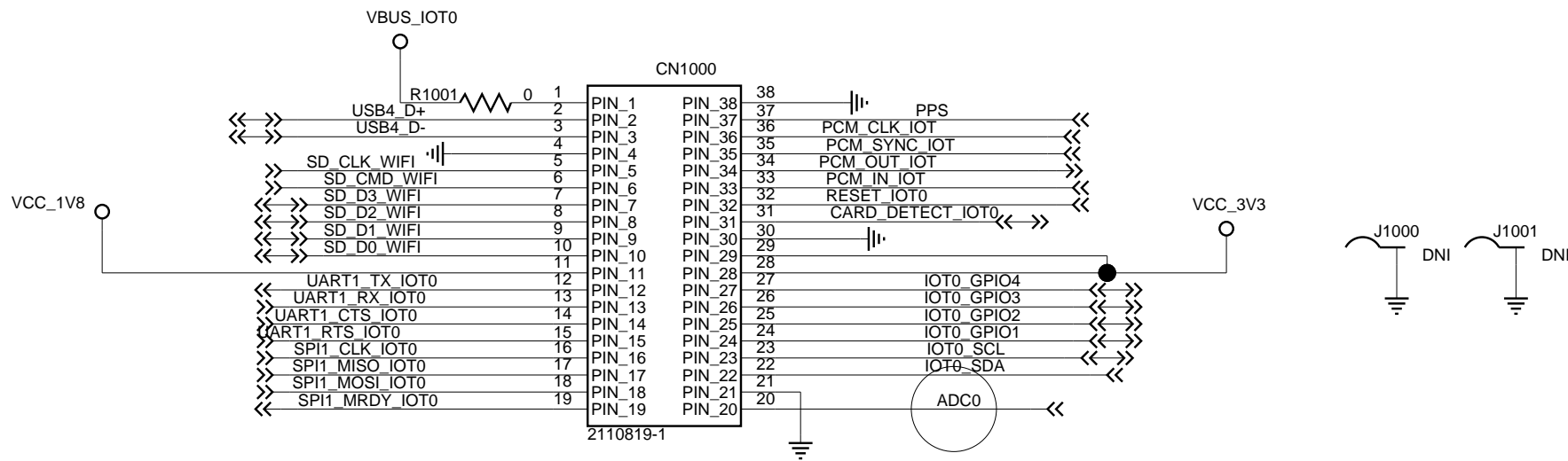
## PCM Expansion #1



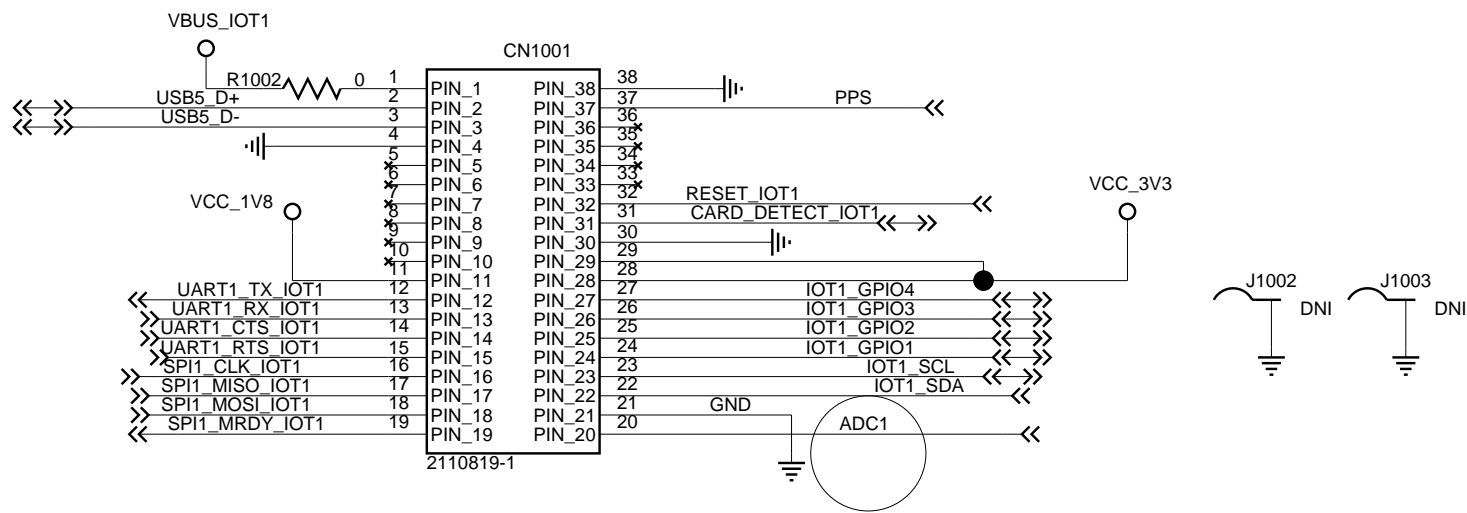
## SDIO Expansion



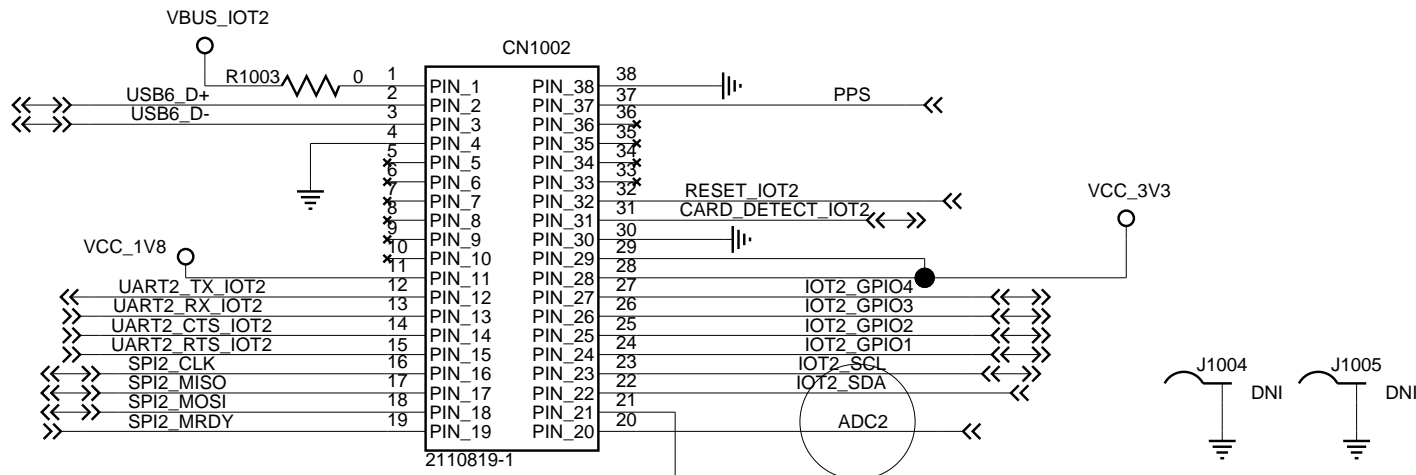
IOT#0



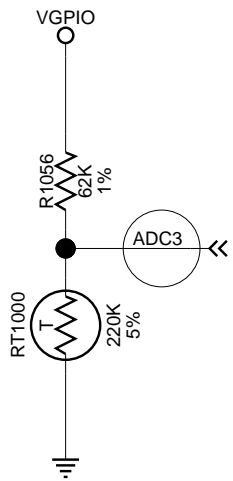
IOT#1



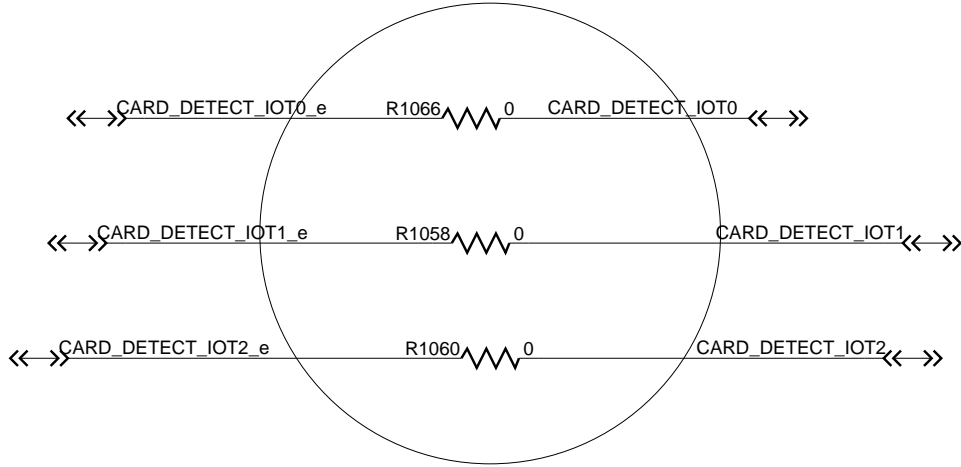
IOT#2



On Board Thermistor



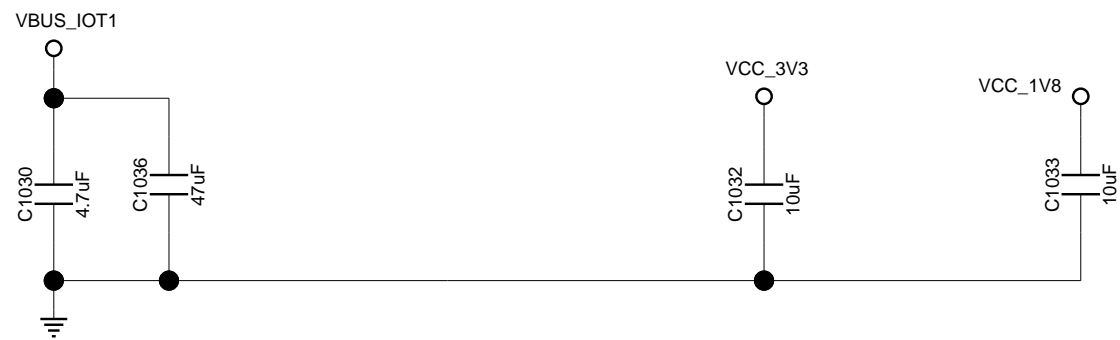
Card detect is confirmed working on GPIO expander. No need for it on WP



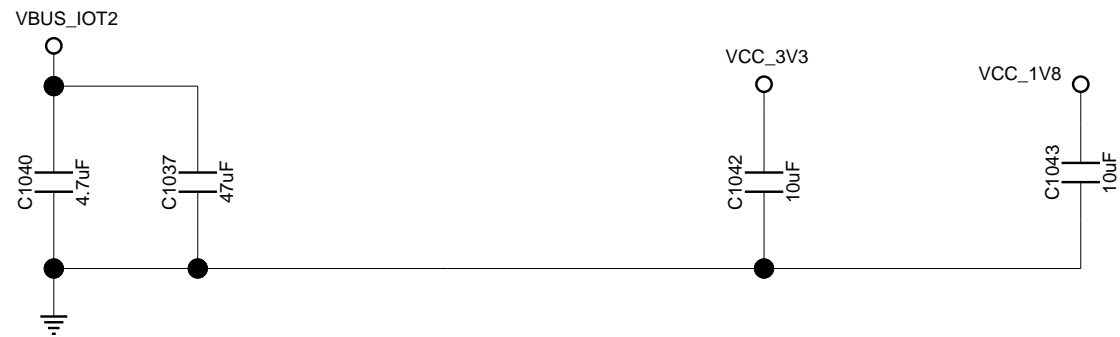
IOT#0



IOT#1



IOT#2



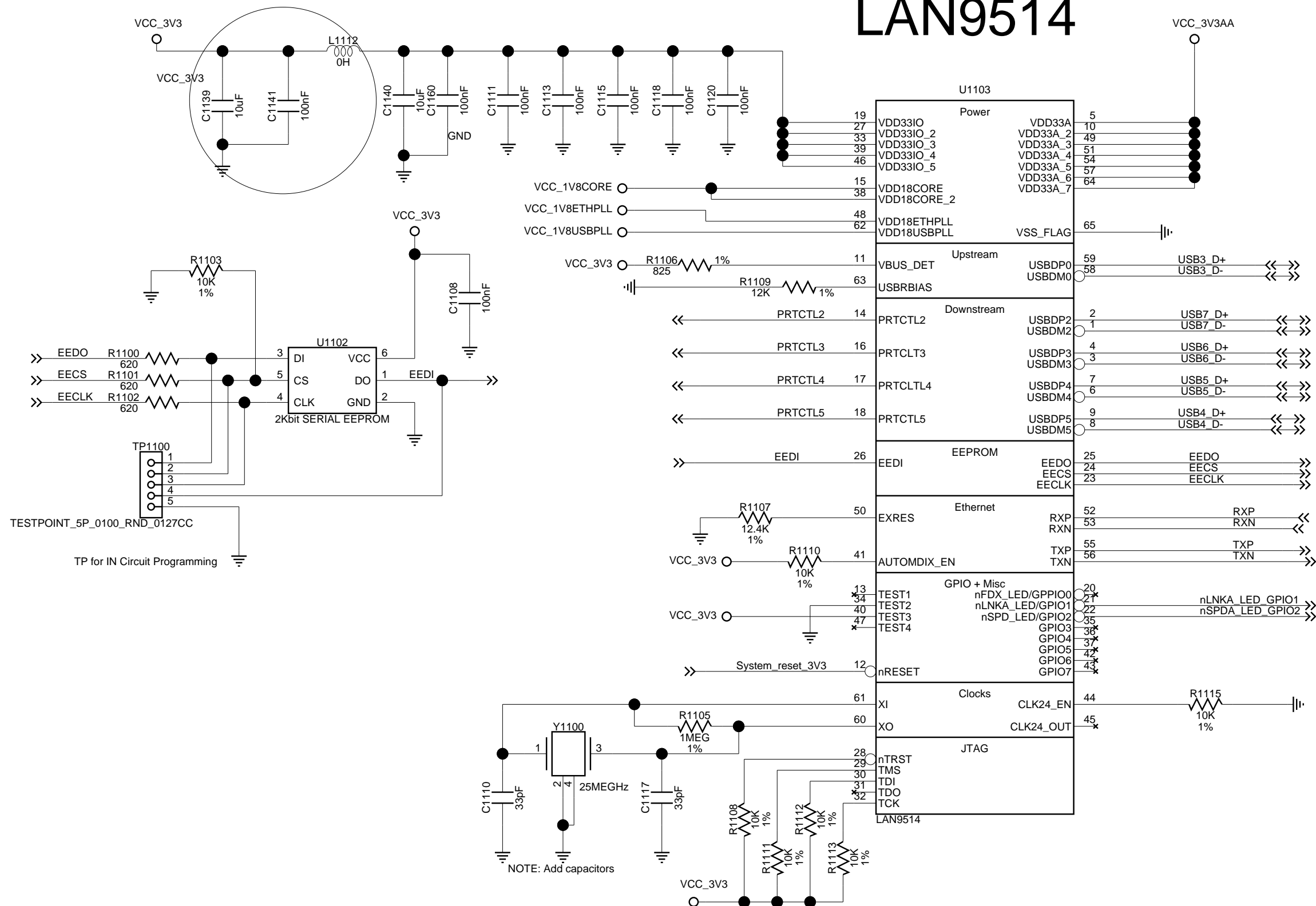
This document contains information which is proprietary and confidential to Sierra Wireless Inc. Disclosure to Persons other than the officers, employees, agent or subcontractors of the company or licensee of this document without the prior written permission of Sierra Wireless Inc. is strictly prohibited. Copyright (C) 2014



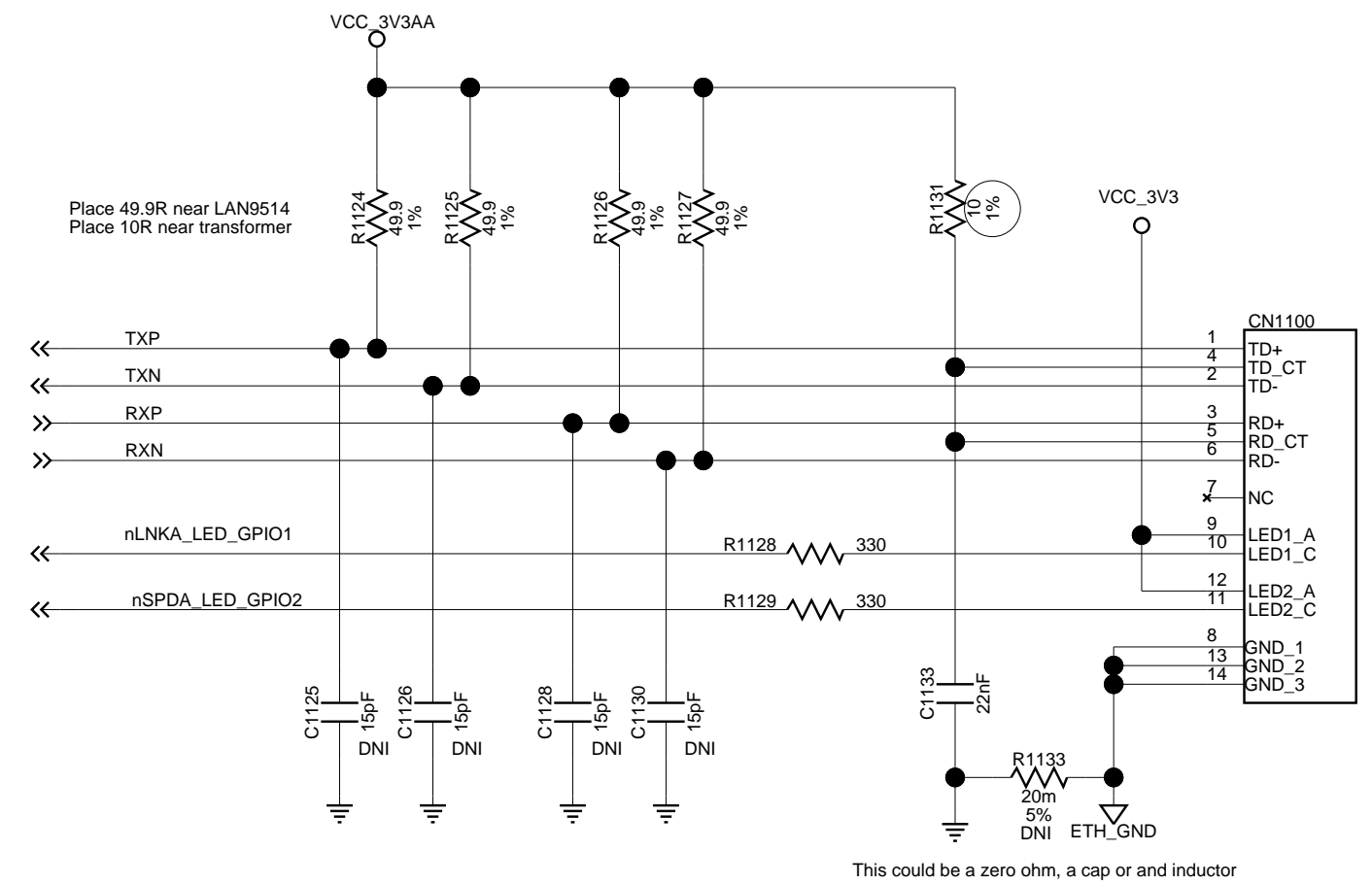
PROJECT see P1  
SCHEMATIC 2500905

SITE see P1  
LEAD ENGINEER see P1  
REV SCH See P1  
REV PCB See P1  
DATE/TIME 30-09-2015\_11:09  
PAGE 10 OF 15

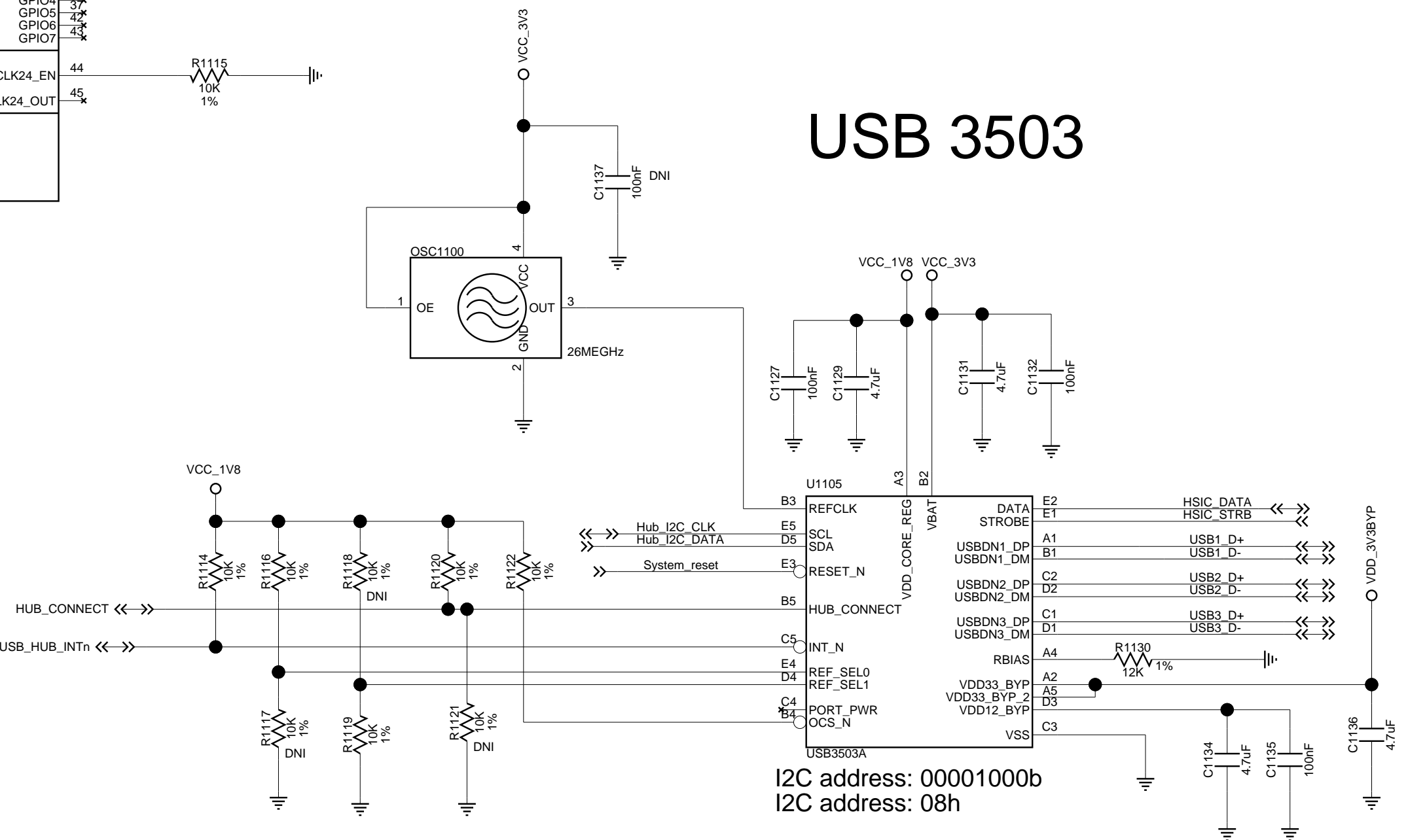
# LAN9514



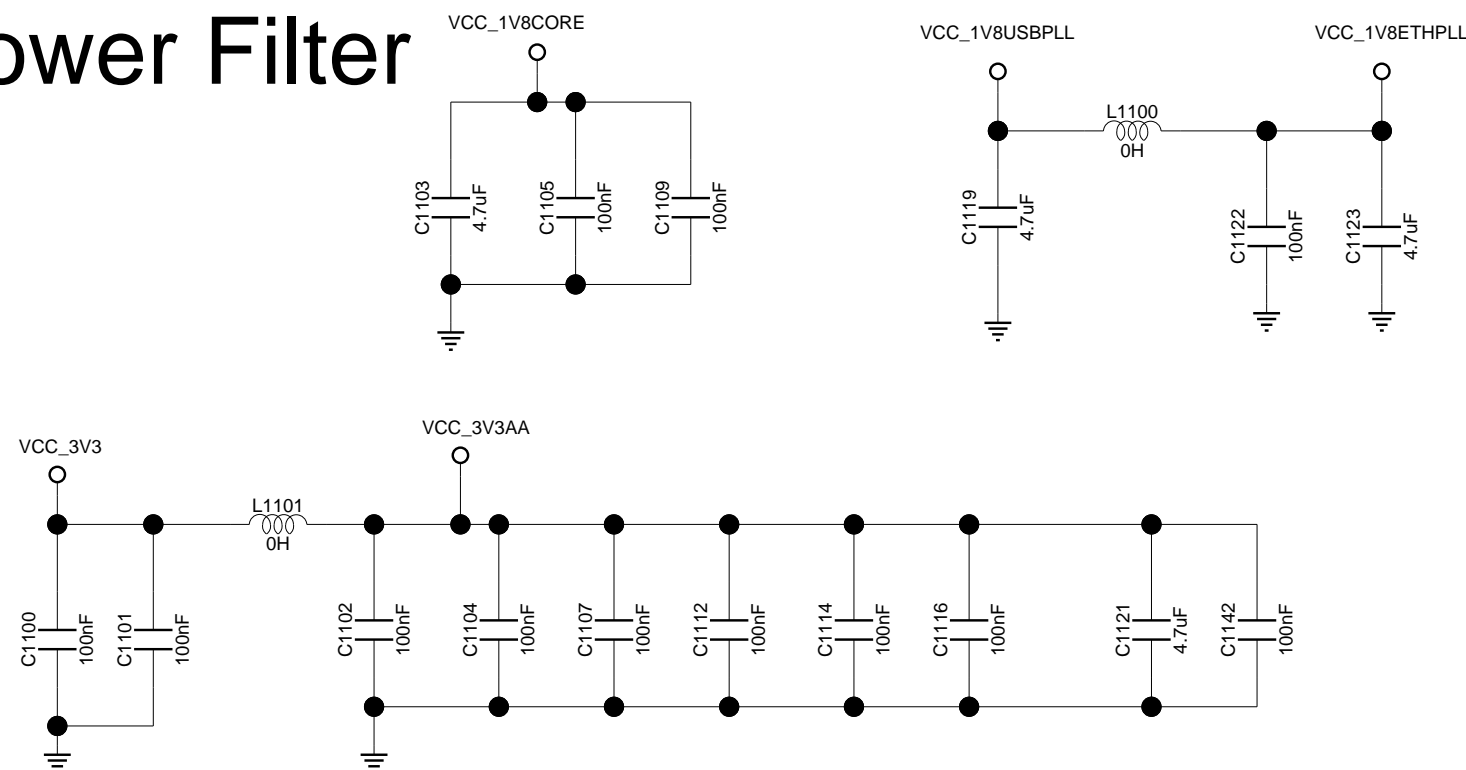
# ETHERNET JACK



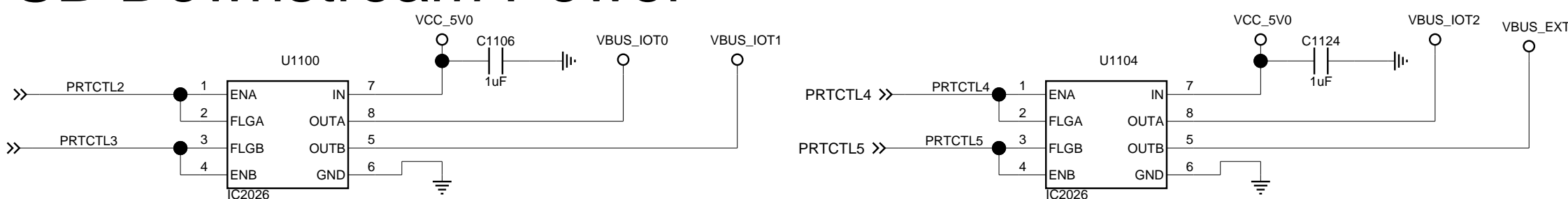
# USB 3503



# Power Filter



# USB Downstream Power



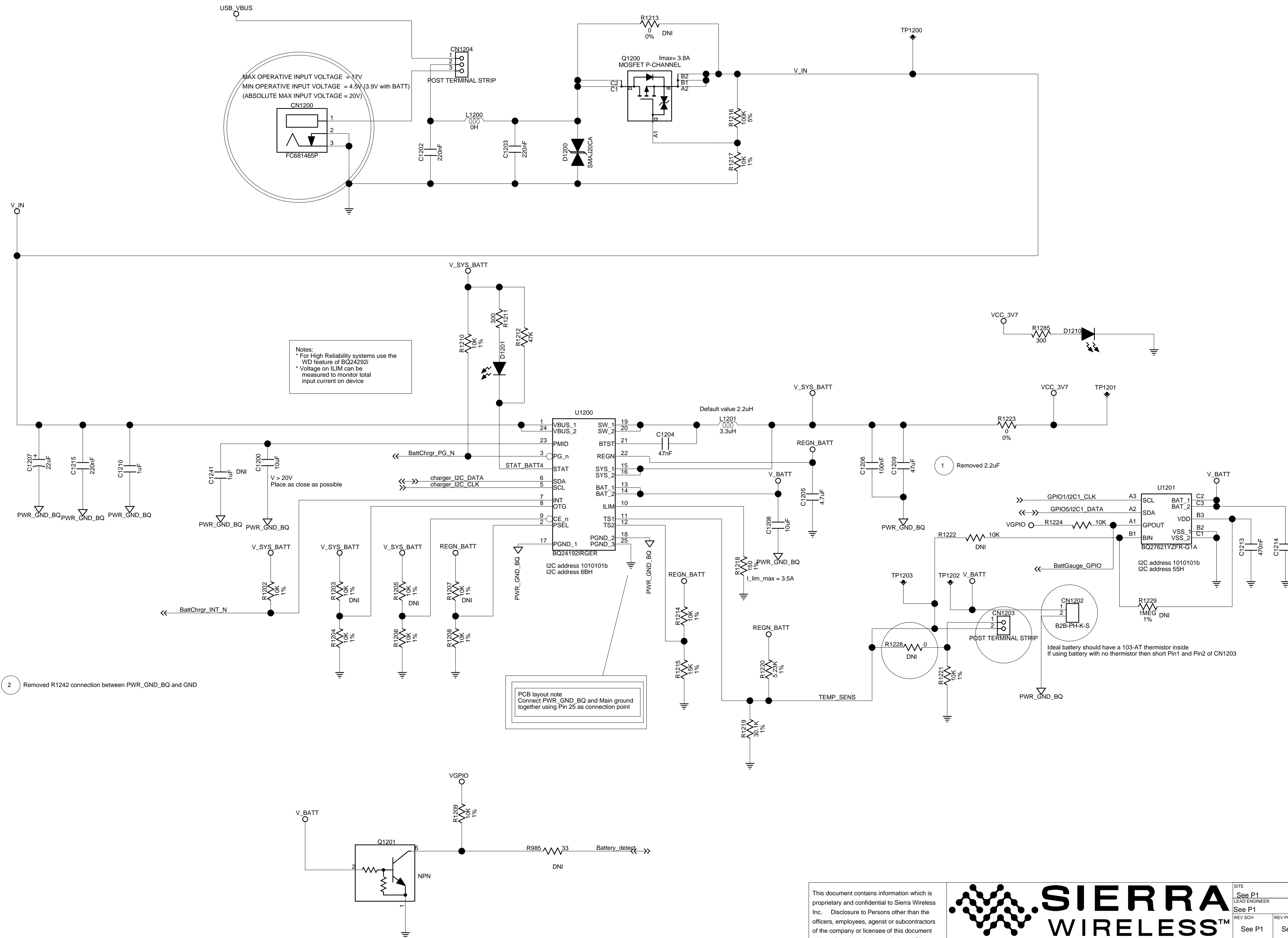
This document contains information which is proprietary and confidential to Sierra Wireless Inc. Disclosure to Persons other than the officers, employees, agent or subcontractors of the company or licensee of this document without the prior written permission of Sierra Wireless Inc. is strictly prohibited.

Copyright (C) 2014

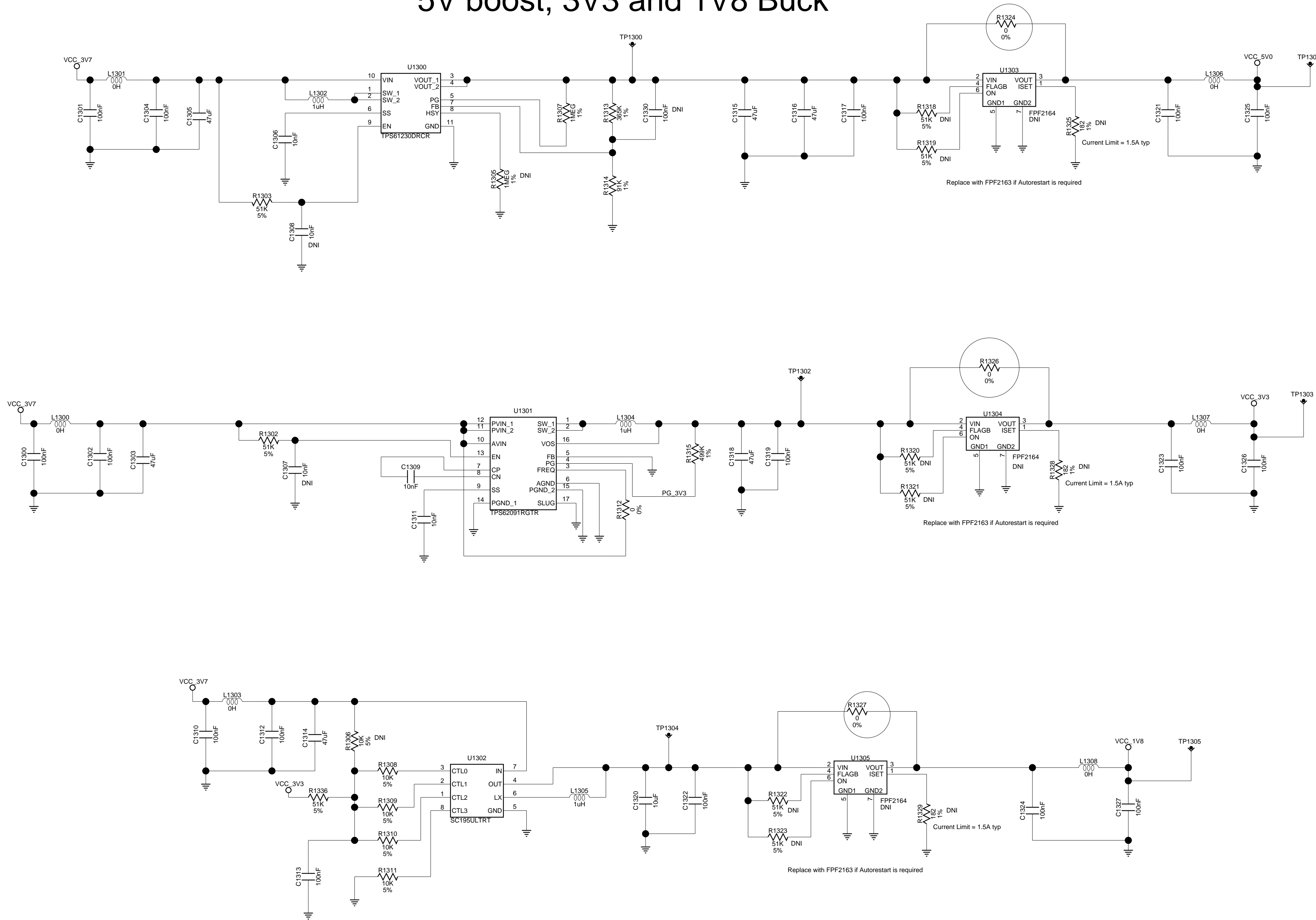


See P1	
AD ENGINEER	
See P1	
IV SCH	REV PCB
See P1	See P1
DATE/TIME	
-10-2015_10:56	
PAGE	
11 OF 15	

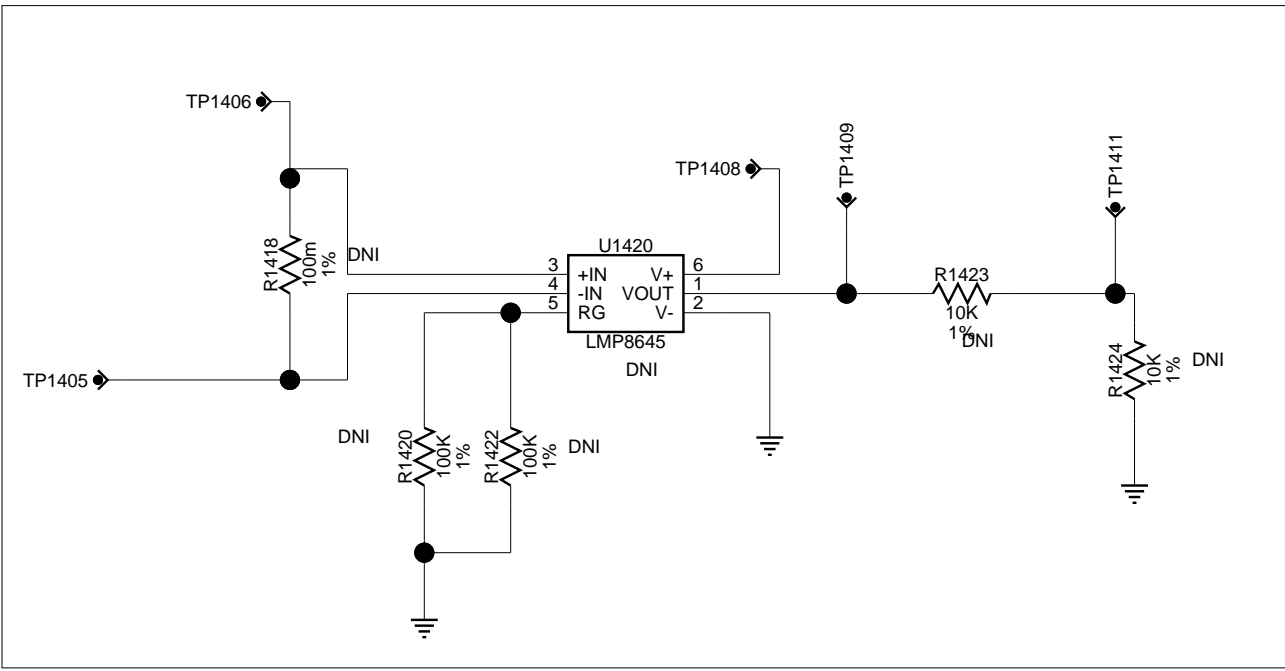
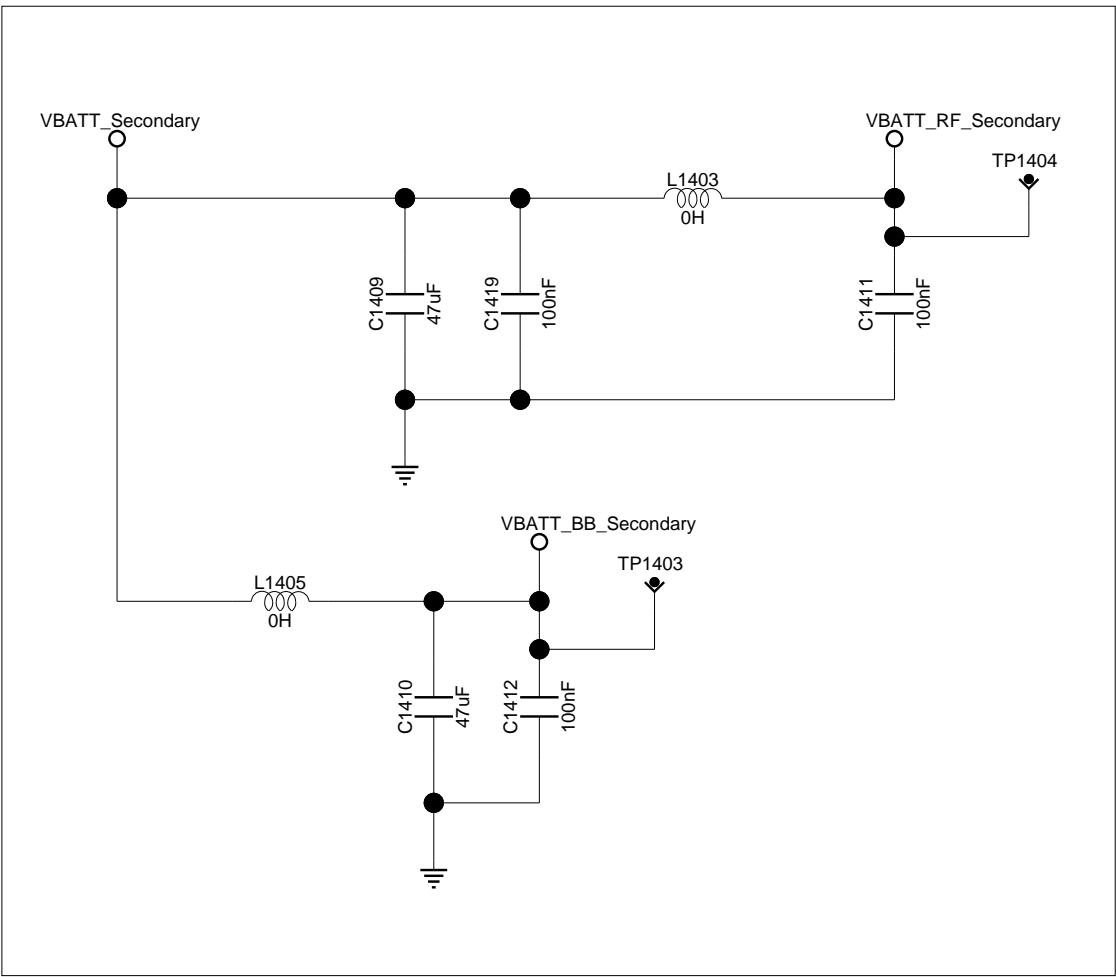
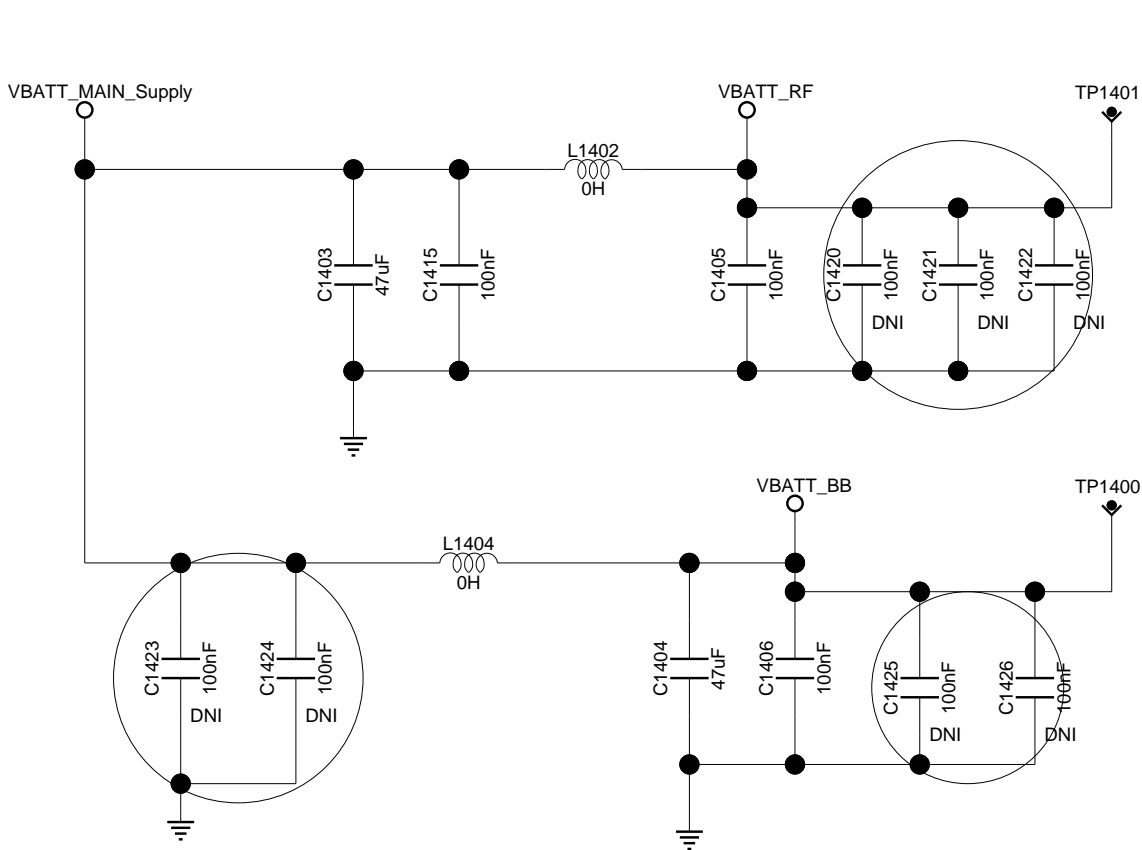
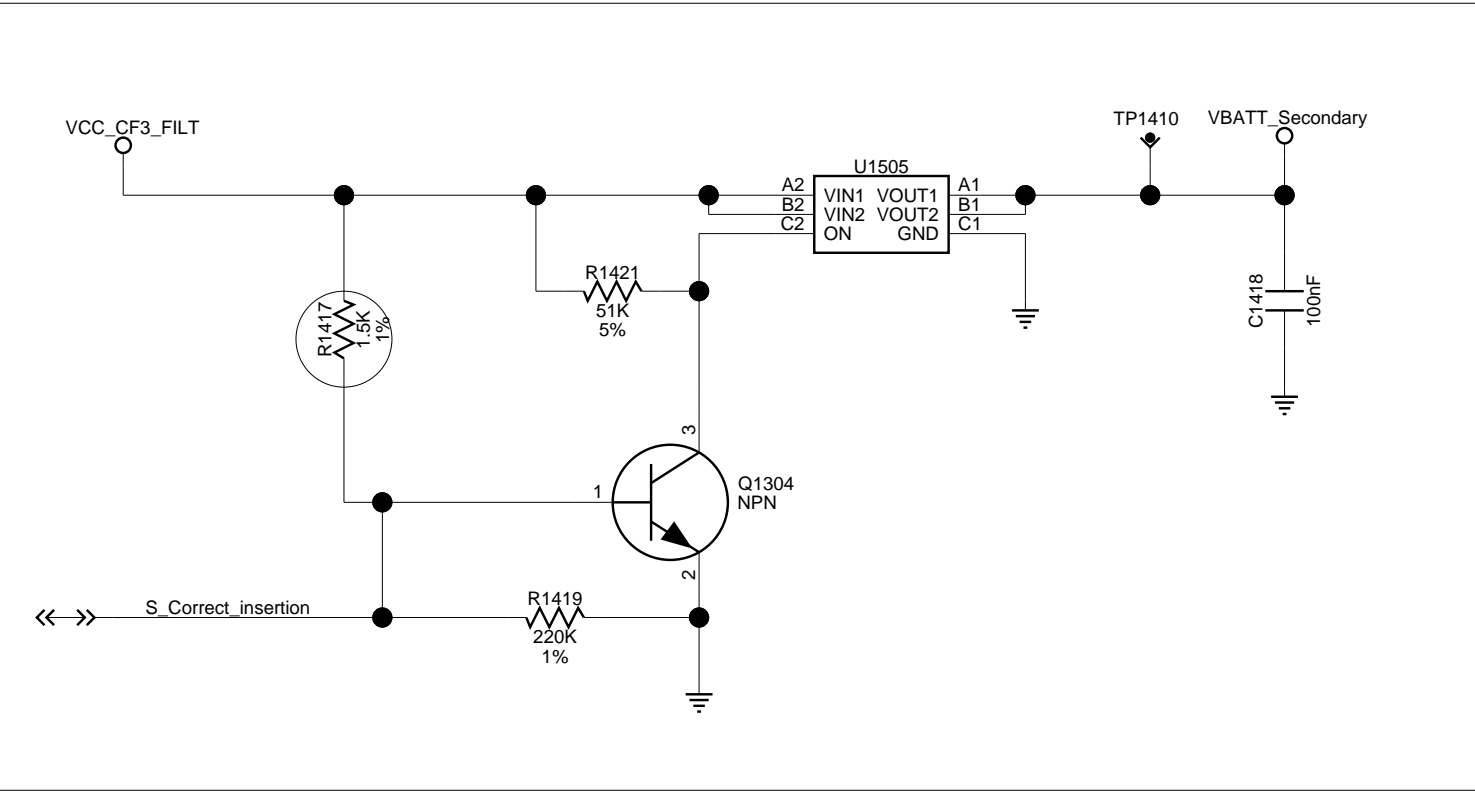
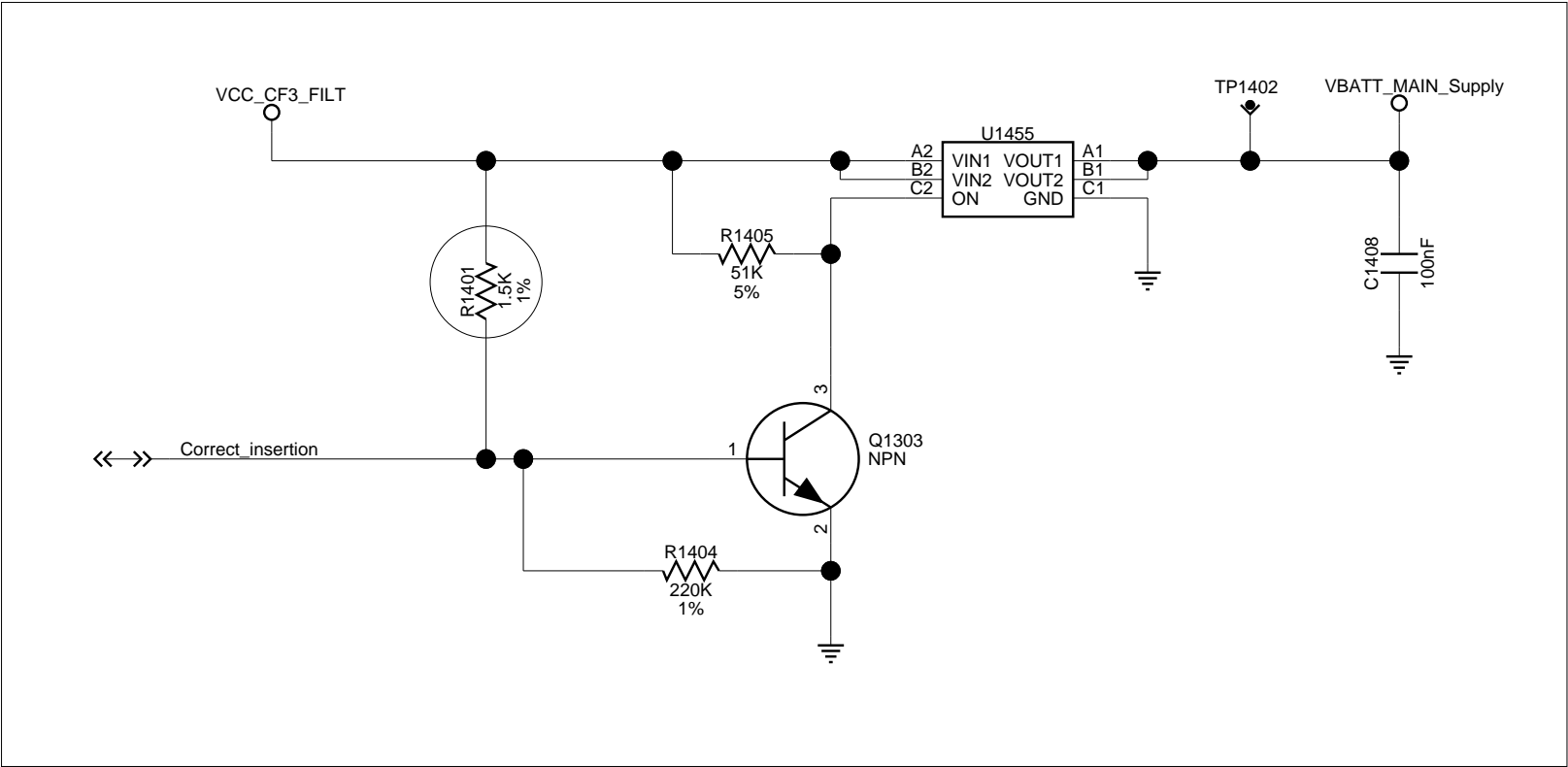
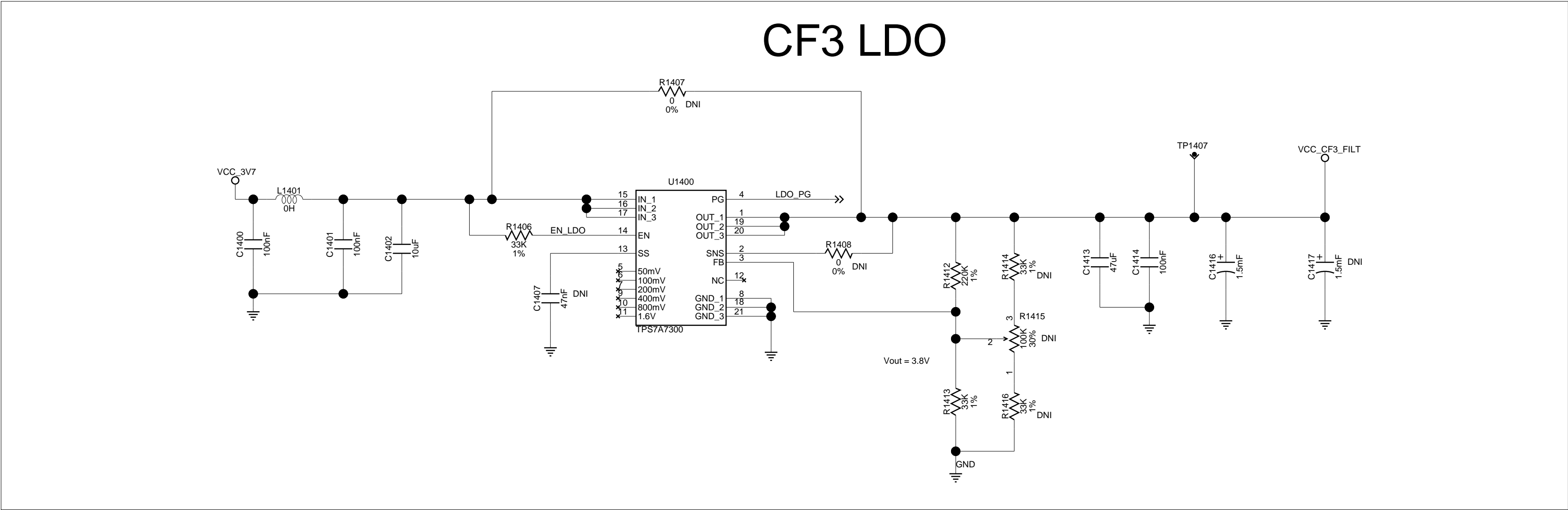
# PSU Front End and 3.7V DC/DC converter



# 5V boost, 3V3 and 1V8 Buck



CF3 LDO

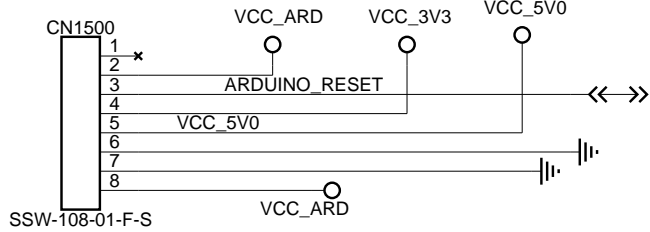


# Make sure to line up Arduino connector orientation properly

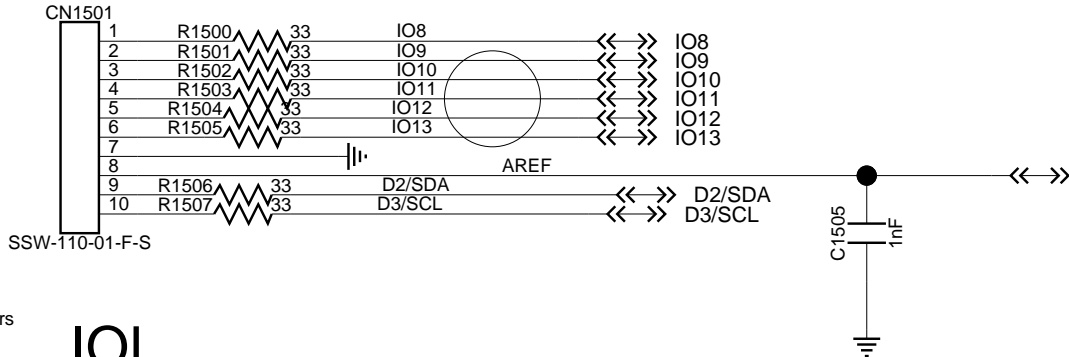
## Arduino Connector

ARDUINO\_RESET: Need to connect: use level shifter

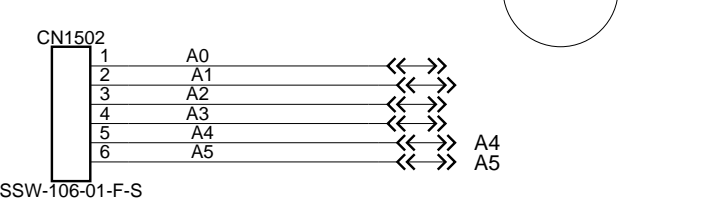
### Power



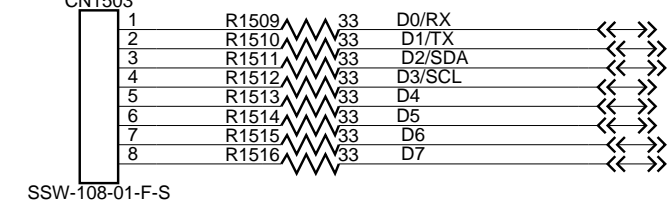
### IOH



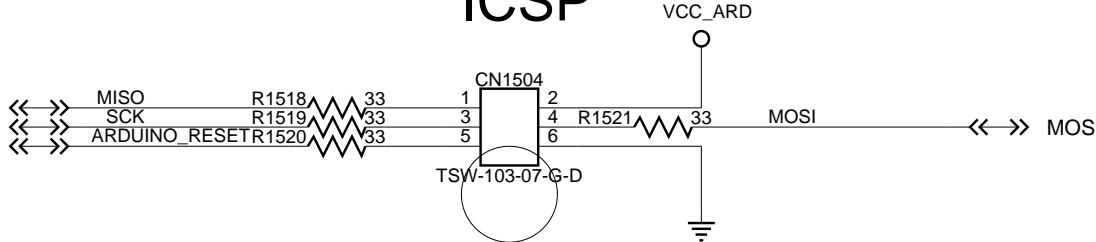
### ADC



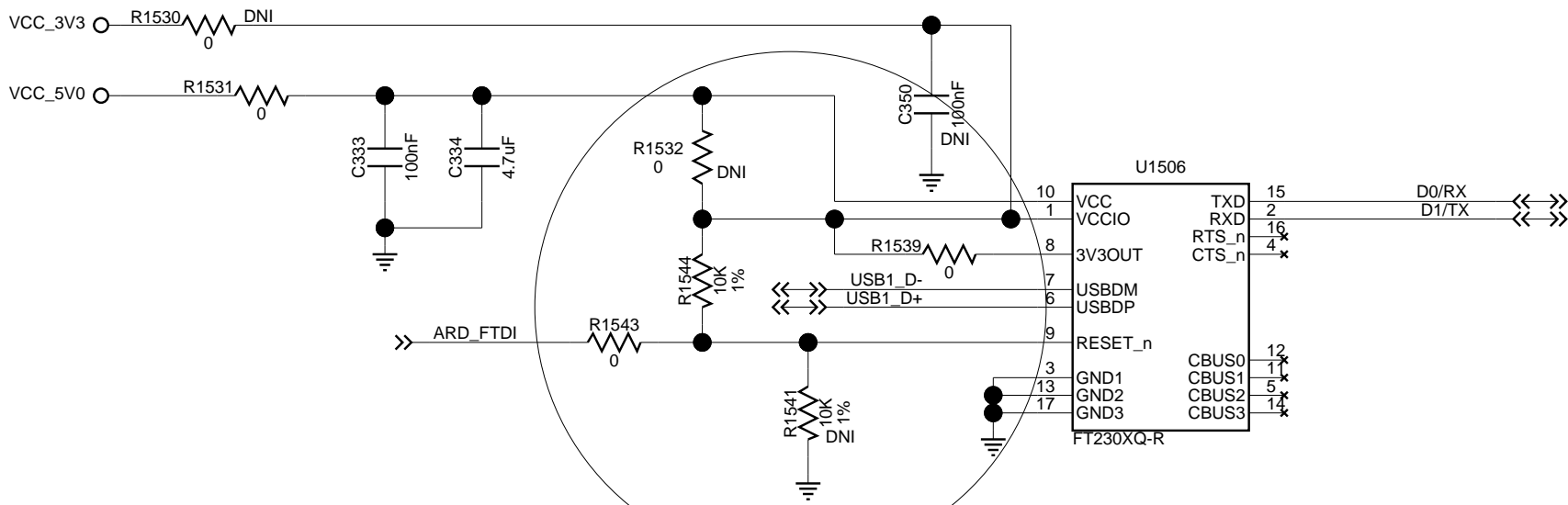
### IOL



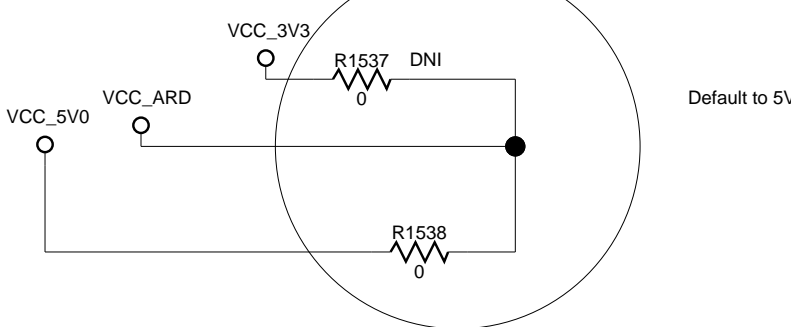
### ICSP



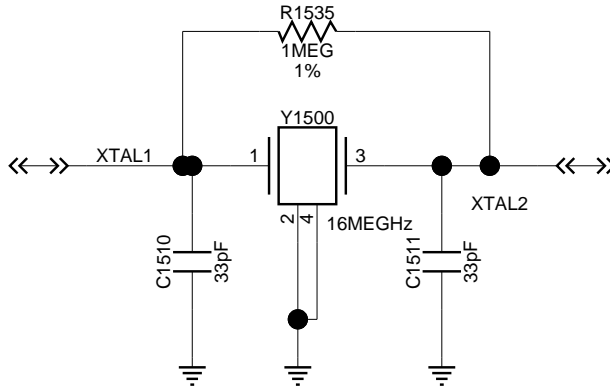
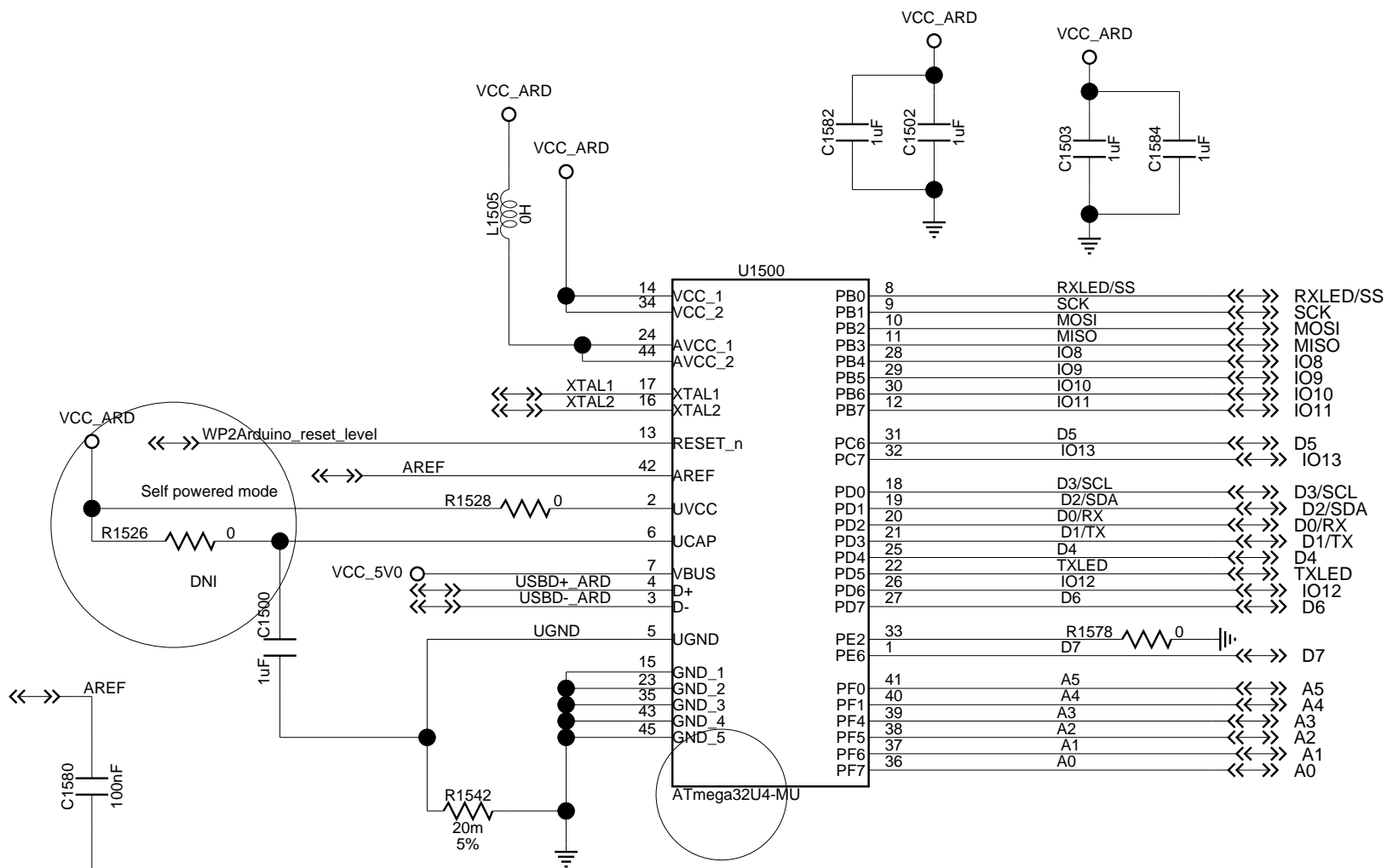
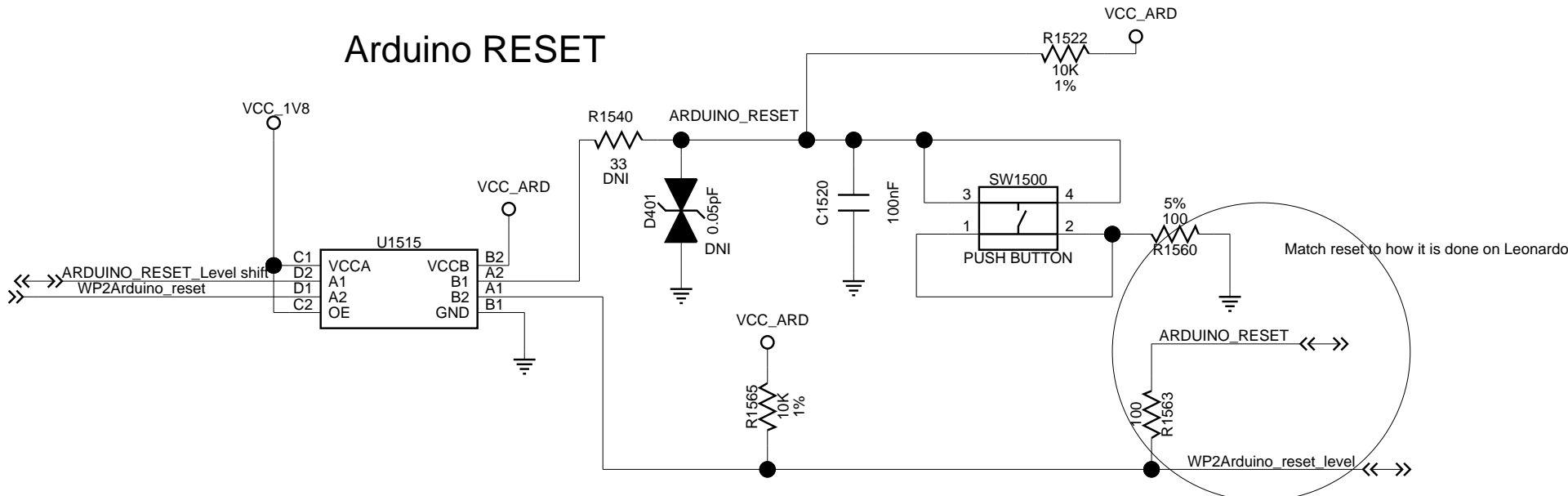
If powered by 5V populate R1531 and R1539  
If powered by 3.3V populate R1530, R1532, R1539 and C350  
If VCC=5V and VCCIO = 3.3V populate R1530, R1531, R1539 and C350 - (remove R1532)



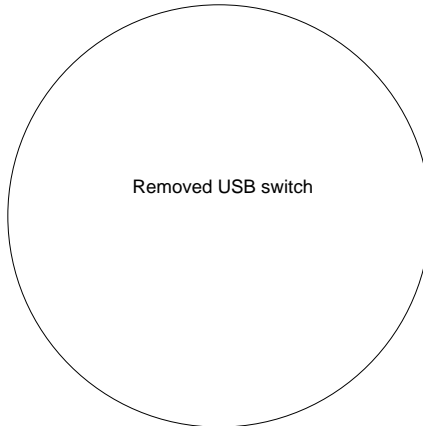
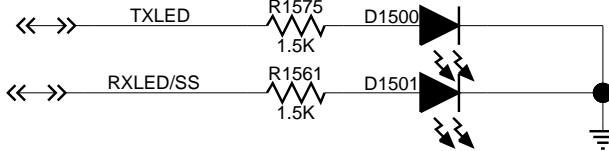
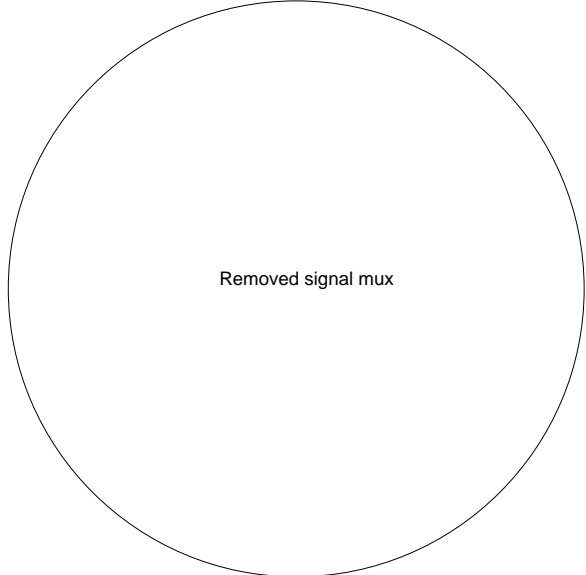
### ARDUINO Voltage Select



### Arduino RESET



Need 22pf 0402. Create symbol



This document contains information which is proprietary and confidential to Sierra Wireless Inc. Disclosure to Persons other than the officers, employees, agent or subcontractors of the company or licensee of this document without the prior written permission of Sierra Wireless Inc. is strictly prohibited.  
Copyright (C) 2014

**SIERRA  
WIRELESS™**

PROJECT	see P1	SITE	see P1
SCHEMATIC	2500905	LEAD ENGINEER	see P1
		REV SCH	See P1
		REV PCB	See P1
		DATE/TIME	07-10-2015_10:04
		PAGE	15 OF 15