
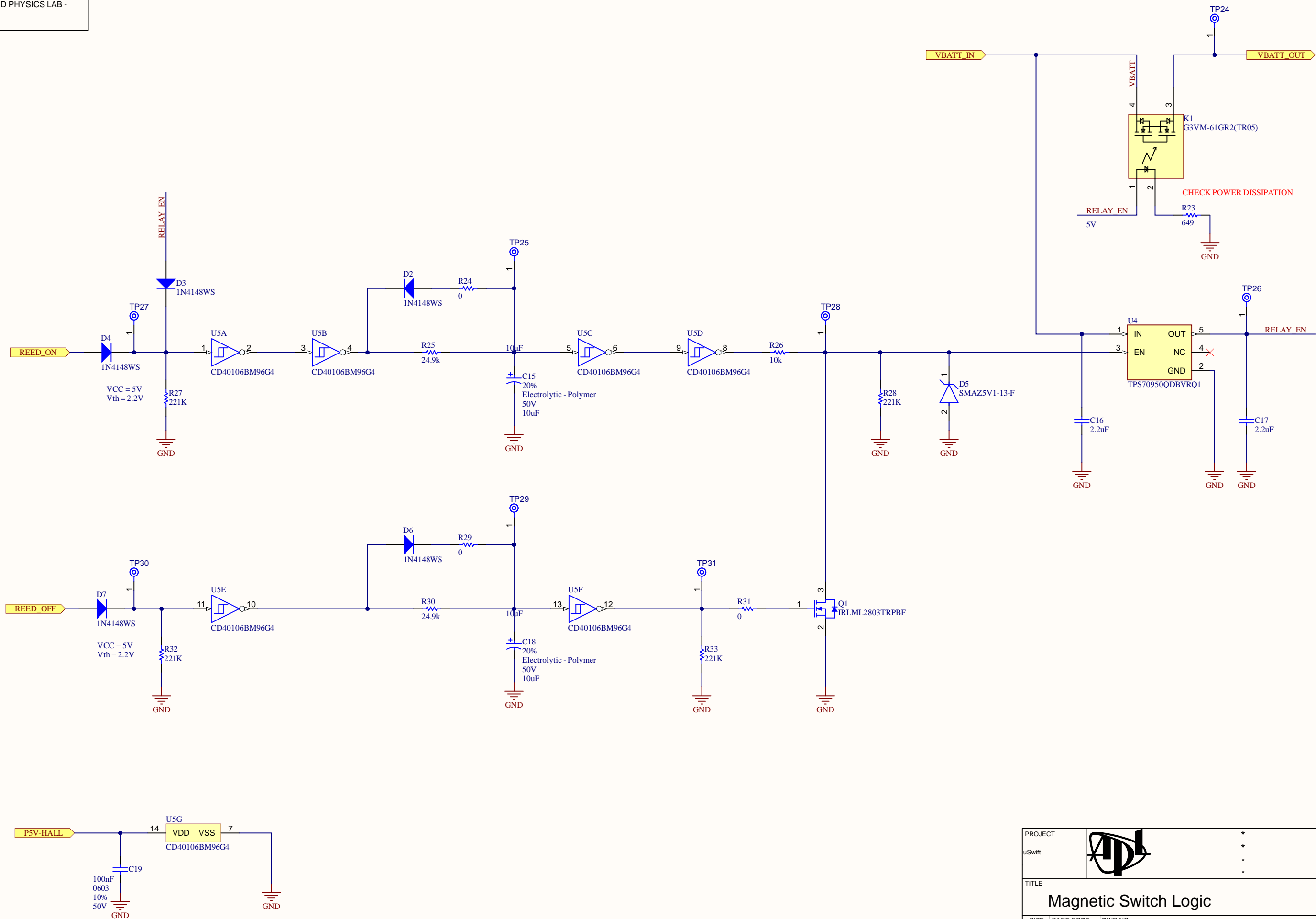

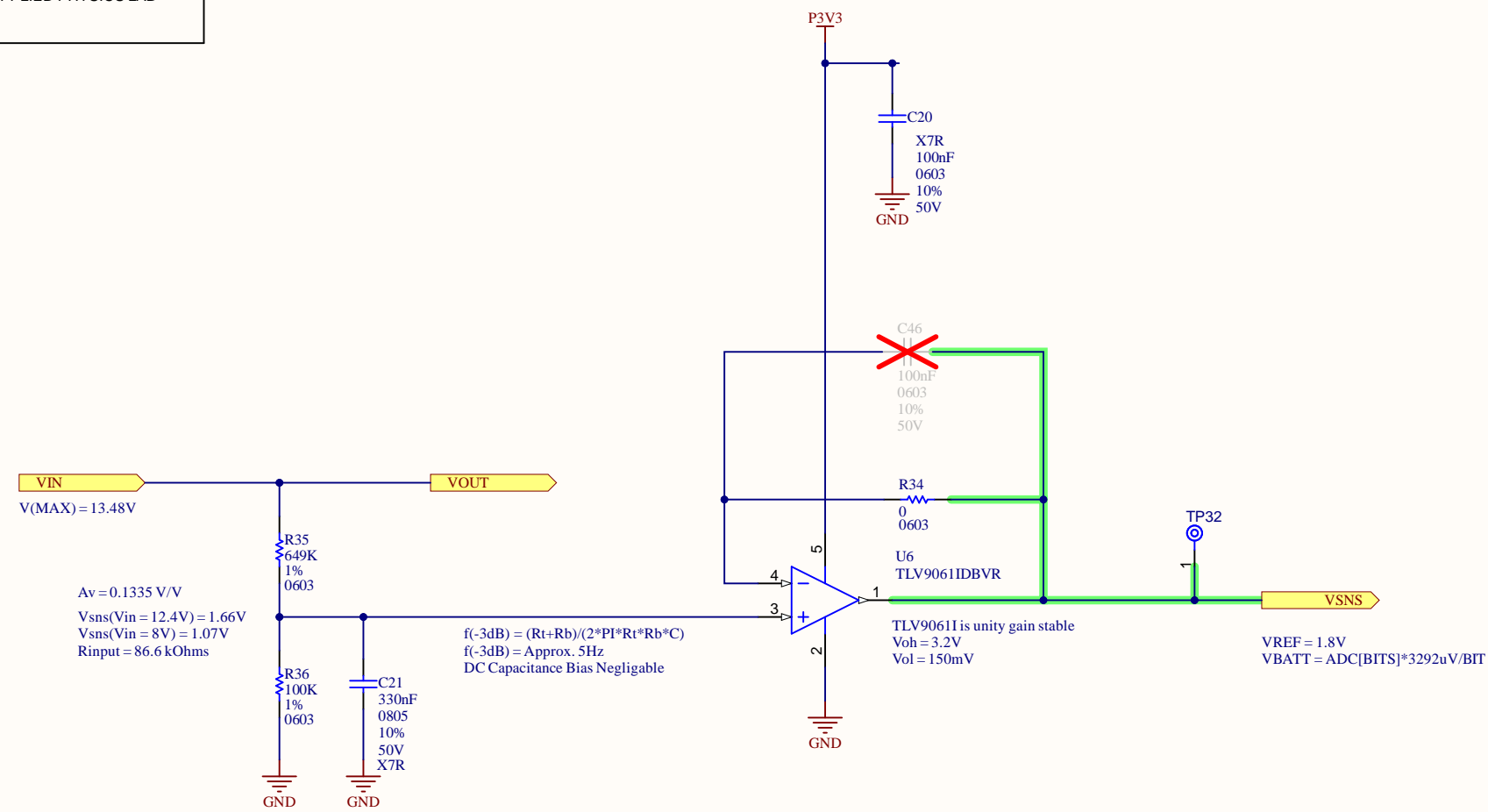



PROJECT			APPLIED PHYSICS LAB		
uSwift			UNIVERSITY OF WASHINGTON		
			1013 NE 40TH STREET SEATTLE, WA 98105		
TITLE					
HALL Effect Switches					
SIZE	CAGE CODE	DWG NO.			REV
B	98514	90039			2.1B
FILE NAME				SHEET	OF
HallEffectSwitch.SchDoc				2	18



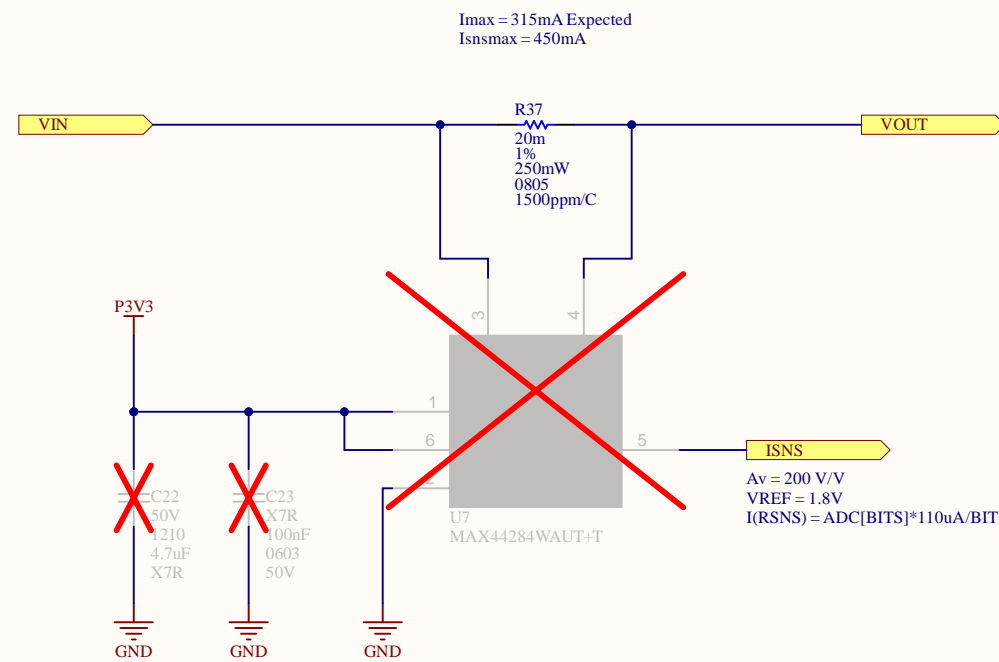
PROJECT				*	
uSwift				*	
				*	
				*	
TITLE					
Magnetic Switch Logic					
SIZE	CAGE CODE	DWG NO.			REV
B	98514	90039			2.1B
FILE NAME				SHEET	OF
MagneticPowerSwitch.SchDoc				3	18


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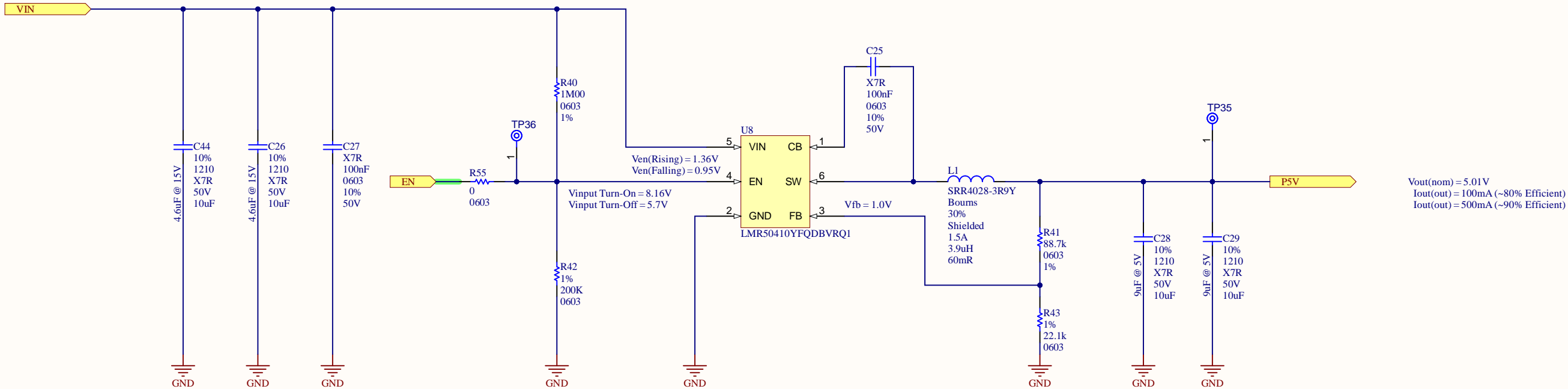



PROJECT				*****	
uSwift				*****	
				*****	
				*****	
TITLE					
Voltage Sense					
SIZE	CAGE CODE	DWG NO.			REV
B	98514	90039			2.1B
FILE NAME				SHEET	OF
VSense_SchDoc				4	18

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PROJECT				*****	
uSwift				*****	
				*****	
				*****	
TITLE					
Current Sense					
SIZE	CAGE CODE	DWG NO.			REV
B	98514	90039			2.1B
FILE NAME				SHEET	OF
ISense.SchDoc				5	18

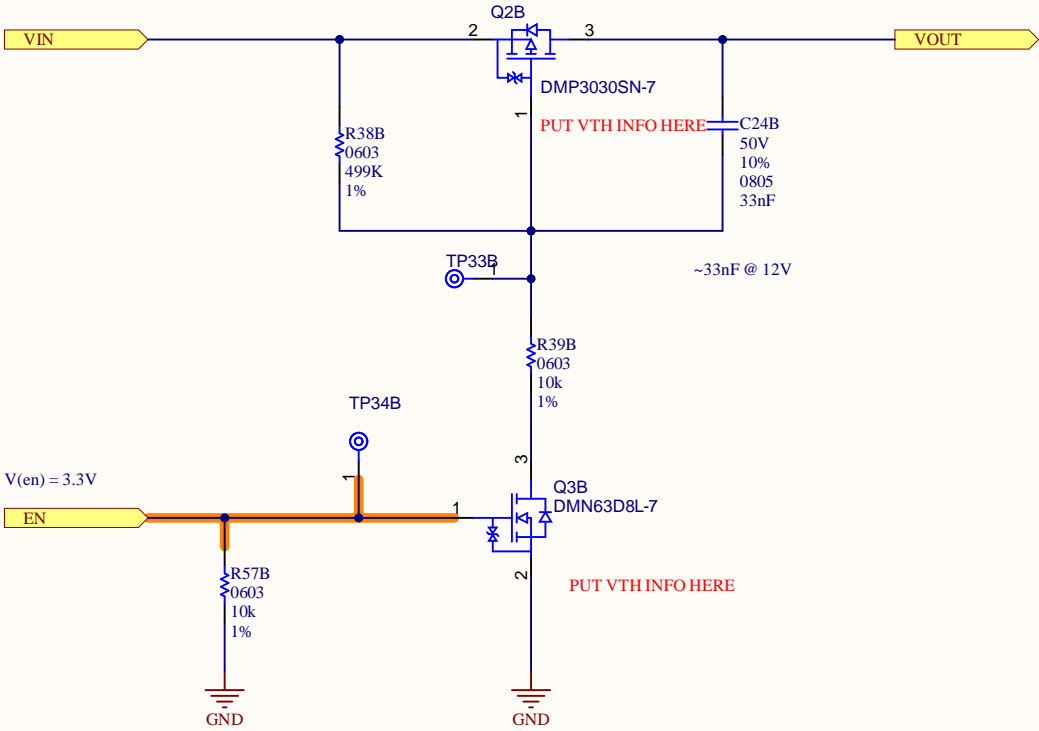



PROJECT		 APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105	
uSwift			
TITLE			
P5V DC/DC Converter			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	90039	2.1B
FILE NAME		P5V_Regulator.SchDoc	SHEET 6 OF 18

5V & BATTERY VOLTAGE SOFT-START LOAD SWITCH

Approx 10ms soft-start  
Approx 2.5V/ms soft-start  
Vds(max) = -30V  
I(max) = 700mA

VIN MUST BE GREATER THAN 4V FOR RELIABLE OPERATION

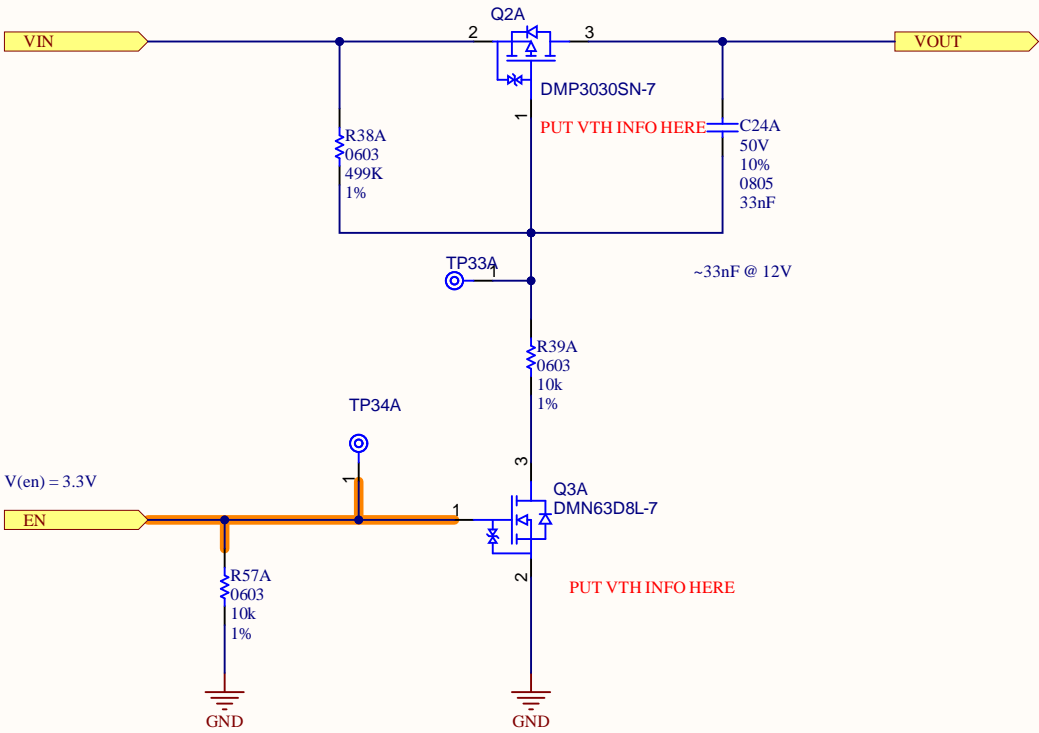



PROJECT			*
uSwift			*
			*
			*
TITLE			
3.3V Load Switch			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	90039	2.1
FILE NAME			SHEET
PowerSwitch_P12V.SchDoc			7 OF 18

5V & BATTERY VOLTAGE SOFT-START LOAD SWITCH

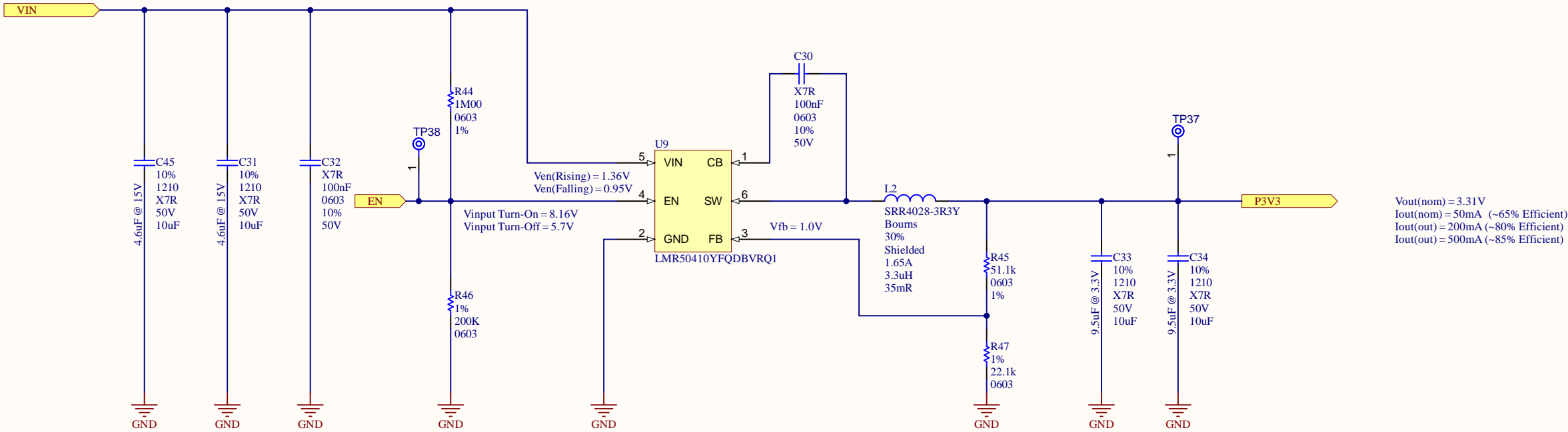
Approx 10ms soft-start  
Approx 2.5V/ms soft-start  
Vds(max) = -30V  
I(max) = 700mA


VIN MUST BE GREATER THAN 4V FOR RELIABLE OPERATION



PROJECT			*
uSwift			*
			*
			*
TITLE			
3.3V Load Switch			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	90039	2.1
FILE NAME			SHEET
PowerSwitch_P12V.SchDoc			7 OF 18



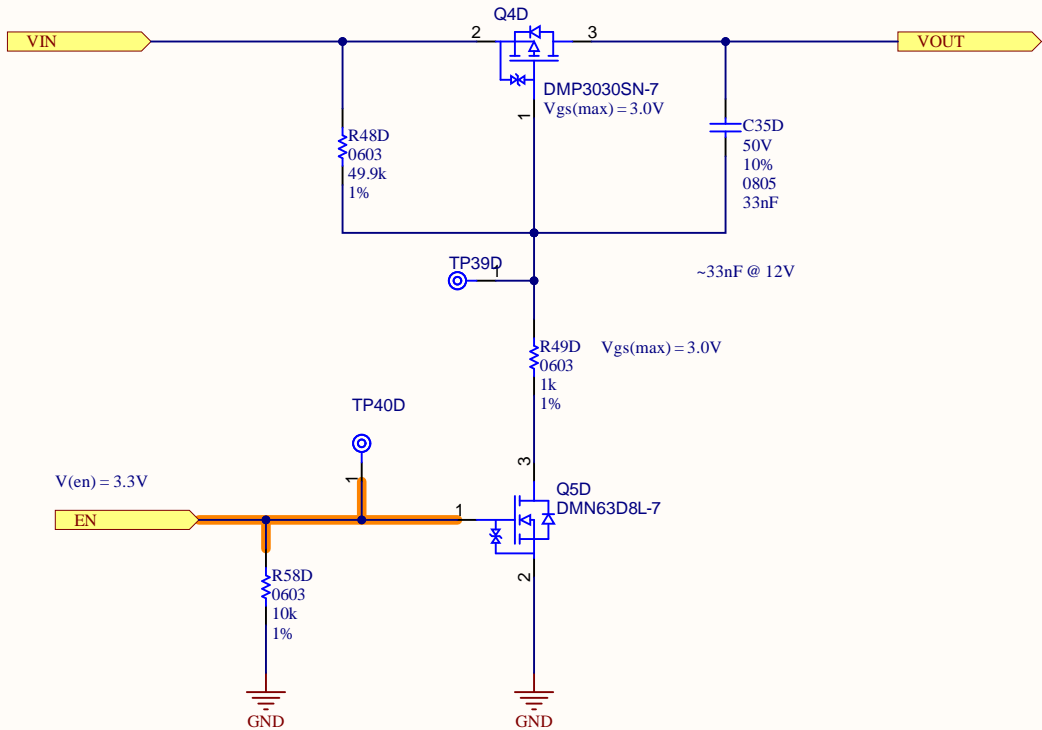



PROJECT		 APPLIED PHYSICS LAB UNIVERSITY OF WASHINGTON 1013 NE 40TH STREET SEATTLE, WA 98105	
uSwift			
TITLE			
P3V3 DC/DC Converter			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	90039	2.1B
FILE NAME		P3V3_Regulator.SchDoc	SHEET 8 OF 18

LOW VOLTAGE SOFT-START LOAD SWITCH

Approx 10ms soft-start  
Approx 2.5V/ms soft-start  
Vds(max) = -30V  
I(max) = 700mA

VIN MUST BE LESS THAN 18V FOR TO AVOID Vgs OVERVOLTAGE

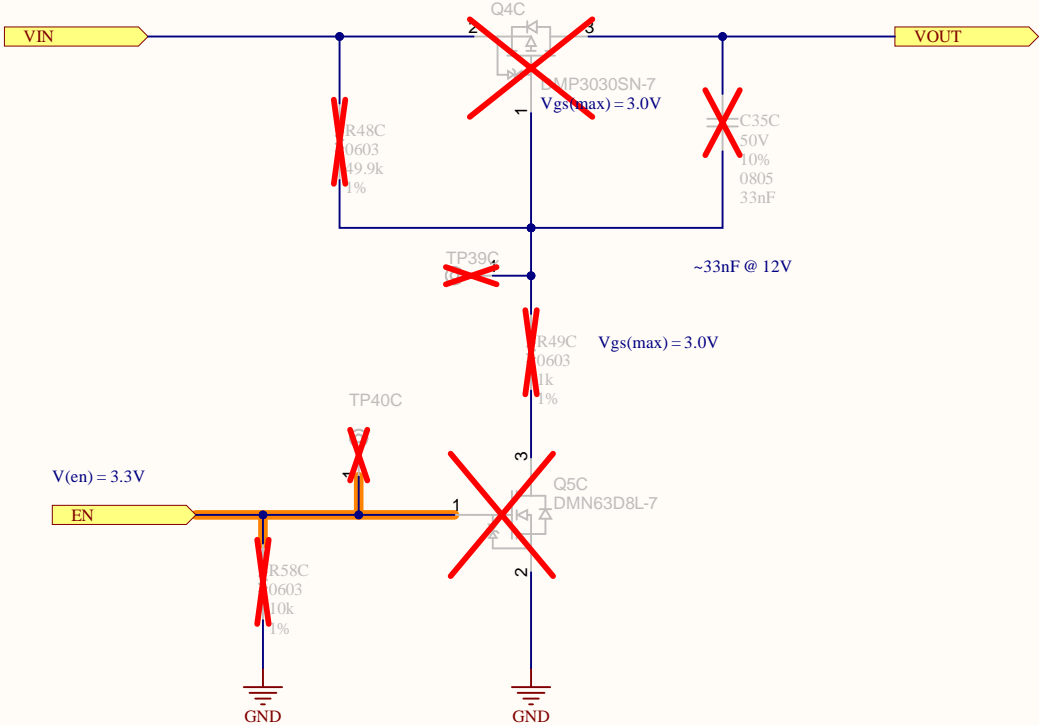



PROJECT			*
uSwift			*
			*
			*
TITLE			
12V Load Switch			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	90039	2.1B
FILE NAME			SHEET
PowerSwitch_P3V3.SchDoc			9 OF 18

LOW VOLTAGE SOFT-START LOAD SWITCH

Approx 10ms soft-start  
Approx 2.5V/ms soft-start  
Vds(max) = -30V  
I(max) = 700mA

VIN MUST BE LESS THAN 18V FOR TO AVOID Vgs OVERVOLTAGE

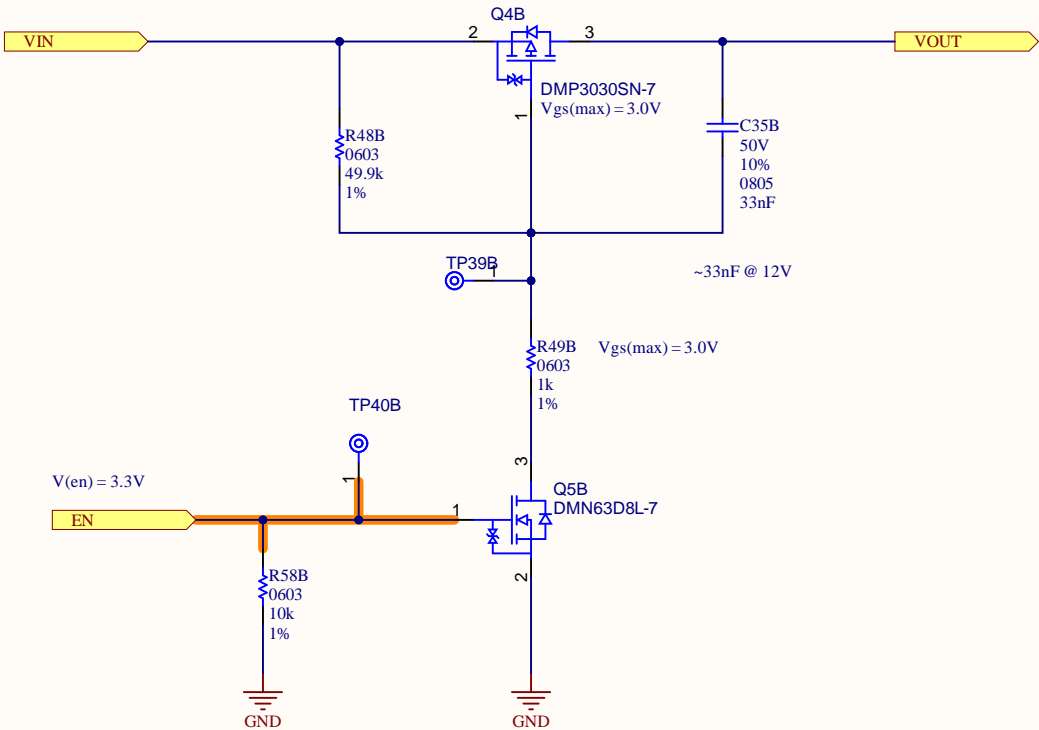



PROJECT			*	
uSwift			*	
			*	
			*	
TITLE				
12V Load Switch				
SIZE	CAGE CODE	DWG NO.		REV
B	98514	90039		2.1B
FILE NAME			SHEET	OF
PowerSwitch_P3V3.SchDoc			9	18

LOW VOLTAGE SOFT-START LOAD SWITCH

Approx 10ms soft-start  
Approx 2.5V/ms soft-start  
 $V_{ds(max)} = -30V$   
 $I(max) = 700mA$

VIN MUST BE LESS THAN 18V FOR TO AVOID  $V_{gs}$  OVERVOLTAGE

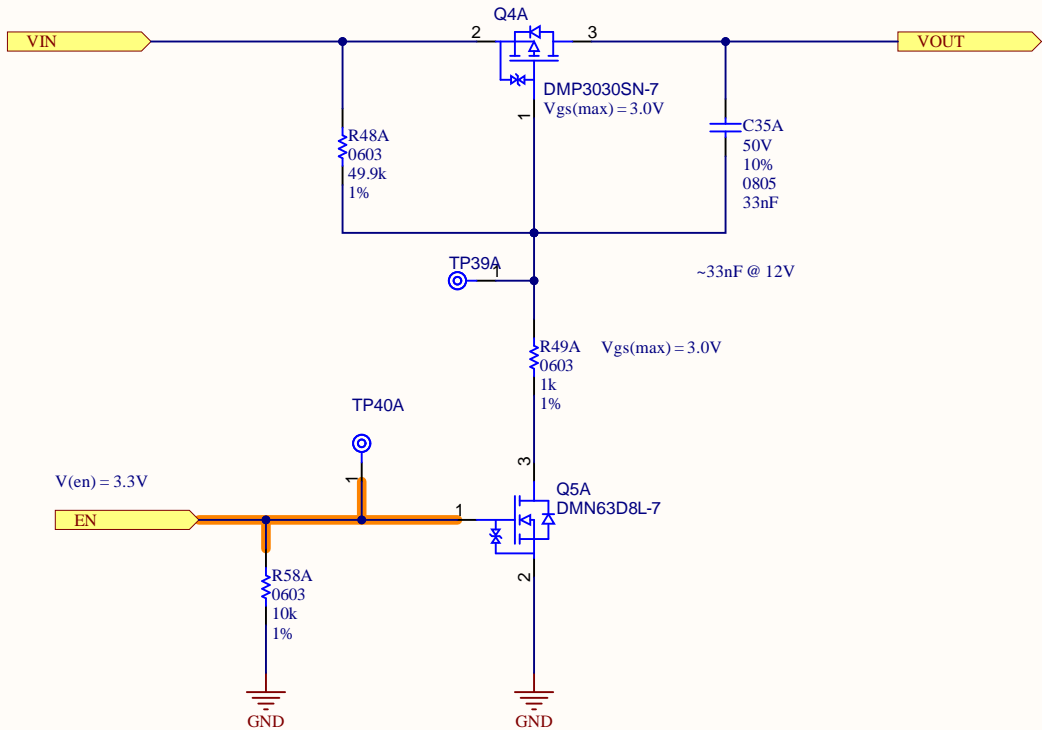



PROJECT			*
uSwift			*
			*
			*
TITLE			
12V Load Switch			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	90039	2.1B
FILE NAME PowerSwitch_P3V3.SchDoc			SHEET 9 OF 18

LOW VOLTAGE SOFT-START LOAD SWITCH

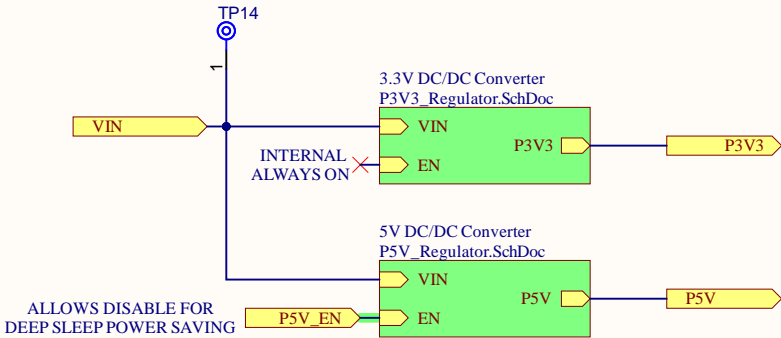
Approx 10ms soft-start  
Approx 2.5V/ms soft-start  
 $V_{ds(max)} = -30V$   
 $I(max) = 700mA$


VIN MUST BE LESS THAN 18V FOR TO AVOID  $V_{gs}$  OVERVOLTAGE



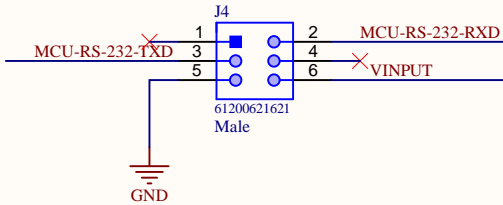
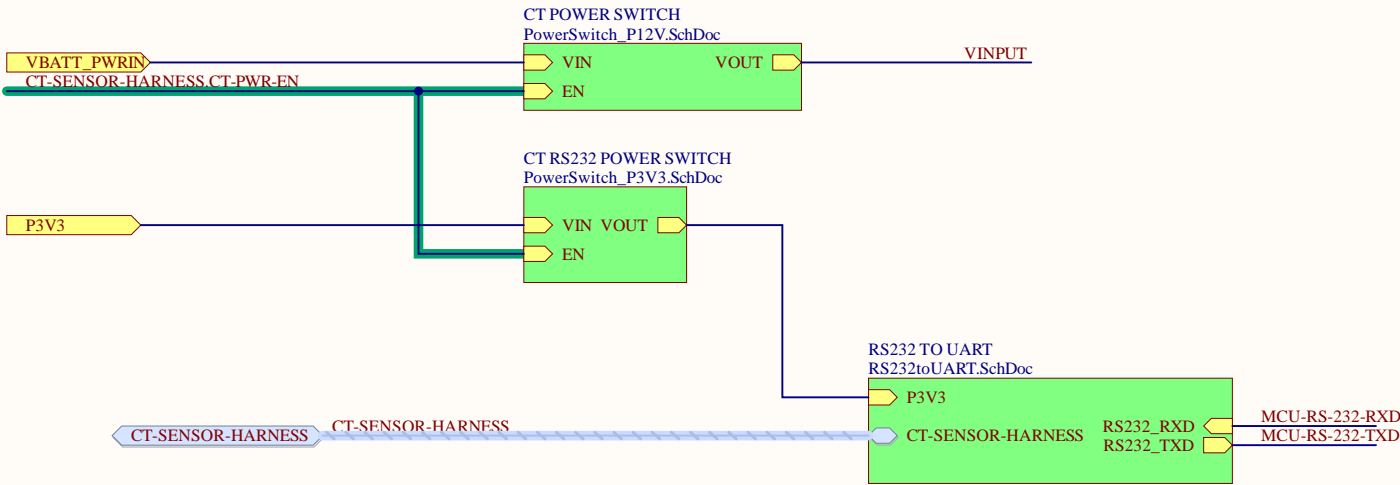
PROJECT				*
uSwift				*
				*
				*
TITLE				
12V Load Switch				
SIZE	CAGE CODE	DWG NO.		REV
B	98514	90039		2.1B
FILE NAME			SHEET	OF
PowerSwitch_P3V3.SchDoc			9	18

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PROJECT			*
uSwift			*
			*
			*
TITLE			
Power Converter Main			
SIZE	CAGE CODE	DWG NO.	REV
B	98514	90039	2.1B
FILE NAME			SHEET
PowerRegulation.SchDoc			10 OF 18

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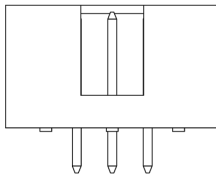



AANDERAA 4319B CT SENSOR TO MICROSWIFT V2 BOARD INTERFACE CONNECTOR

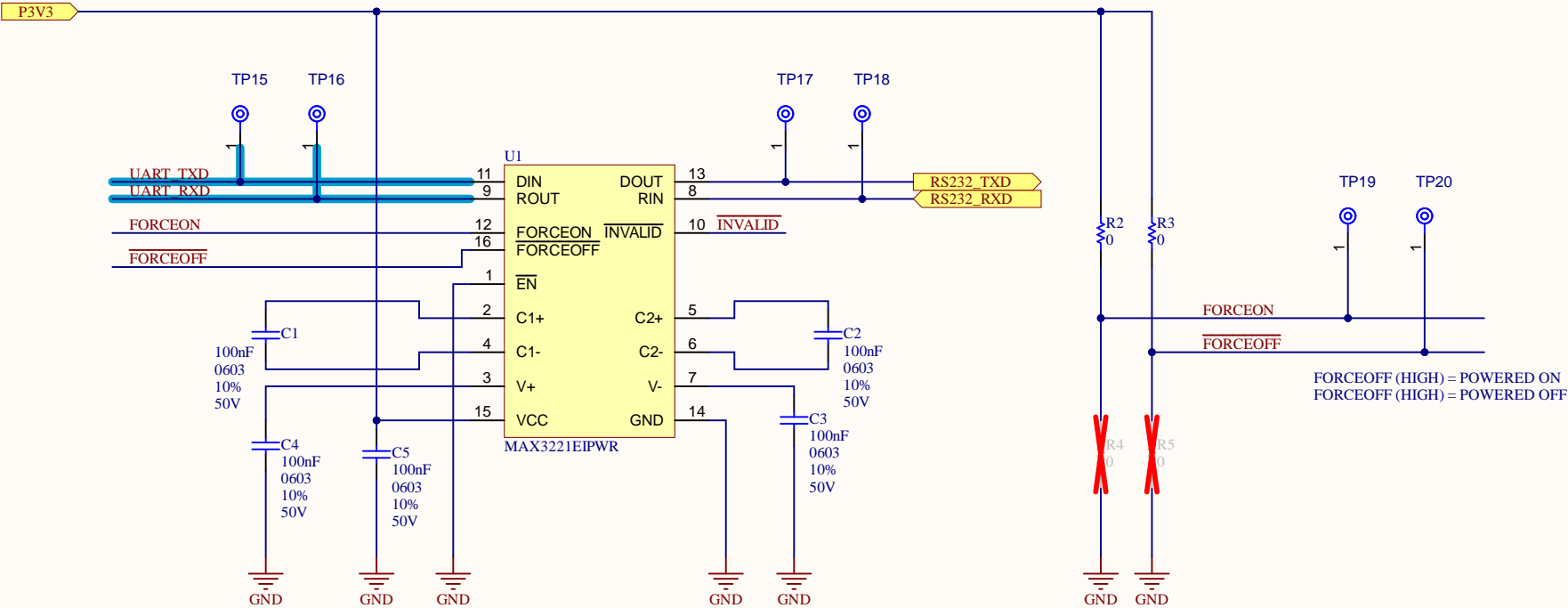
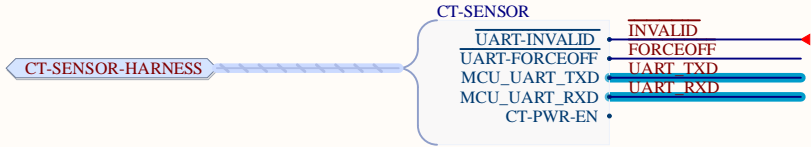


WURTH ELEKTRONIK #61200621621  
MATING CONNECTOR #61200623021

PIN ASSIGNMENT  
1. N/C  
2. TXD FROM INSTRUMENT  
3. RXD TO INSTRUMENT  
4. N/C  
5. GND  
6. V+




PROJECT		*
uSwift		*
		*
		*
TITLE		
CT Sensor PWR/Interconnect		
SIZE	CAGE CODE	DWG NO.
B	98514	90039
FILE NAME		SHEET 11 OF 18
CTSensor.SchDoc		



INPUTS				OUTPUT DOUT	DRIVER STATUS
DIN	FORCEON	FORCEOFF	VALID RIN RS-232 LEVEL		
X	X	L	X	Z	Powered off
L	H	H	X	H	Normal operation with auto-powereown disabled
H	H	H	X	L	
L	L	H	Yes	H	Normal operation with auto-powereown enabled
H	L	H	Yes	L	
L	L	H	No	Z	Powered off by auto-powereown feature
H	L	H	No	Z	

(1) H = high level, L = low level, X = irrelevant, Z = high impedance

DEFAULT VARIANT = NORMAL OPERATION, AUTO-POWERDOWN DISABLED  
FORCEON = LOW  
FORCEOFF = GPIO

PROJECT			*	
uSwift			*	
			*	
			*	
			*	
TITLE				
RS232 to UART Converter				
SIZE	CAGE CODE	DWG NO.		REV
B	98514	90039		2.1B
FILE NAME			SHEET	OF
RS232toUART.SchDoc			12	18



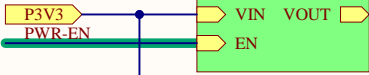
GPS-HARNESS

GPS

MCU\_GNSS-UART-TX  
MCU\_GNSS-UART-RX  
GNSS-EXTINT  
GNSS-PWR-EN  
GNSS-TIMEPULSE

GPS\_TXD  
GPS\_RXD  
EXTINT  
PWR-EN

GPS POWER SWITCH  
PowerSwitch\_P3V3.SchDoc



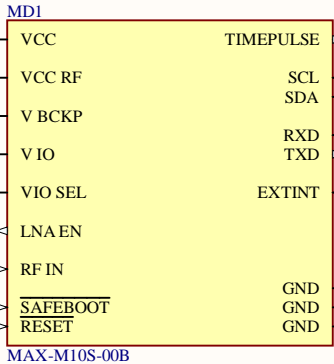
RF\_IN

50\_Ohm

D1  
PESD0402-140  
14V  
0402

GND

No bulk capacitance needed per Integration Manual



GND

TP4

GND

GPS UART RXD

TP2

1

GPS UART TXD


TP3

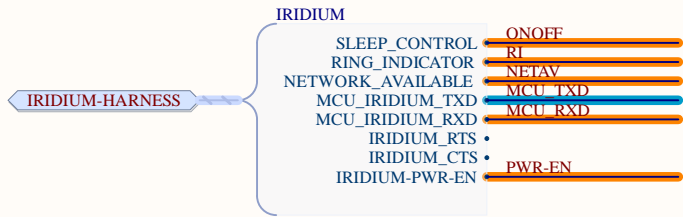
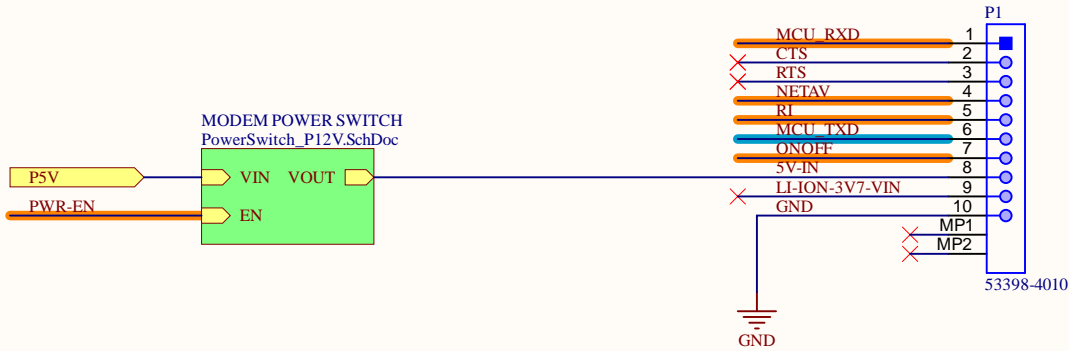
1

TIMEPULSE

GPS\_RXD

GPS\_TXD

PROJECT			*	
uSwift			*	
			*	
			*	
TITLE				
GPS				
SIZE	CAGE CODE	DWG NO.	REV	
B	98514	90039	2.1B	
FILE NAME GPS.SchDoc			SHEET 13	OF 18



RockBLOCK 9603 mating connector: Molex PicoBlade 1.25mm pitch (PN: 51021-1000)  
PCB mating connector: Molex PicoBlade 1.25mm pitch (PN: 053398-4010 GOLD Plating)

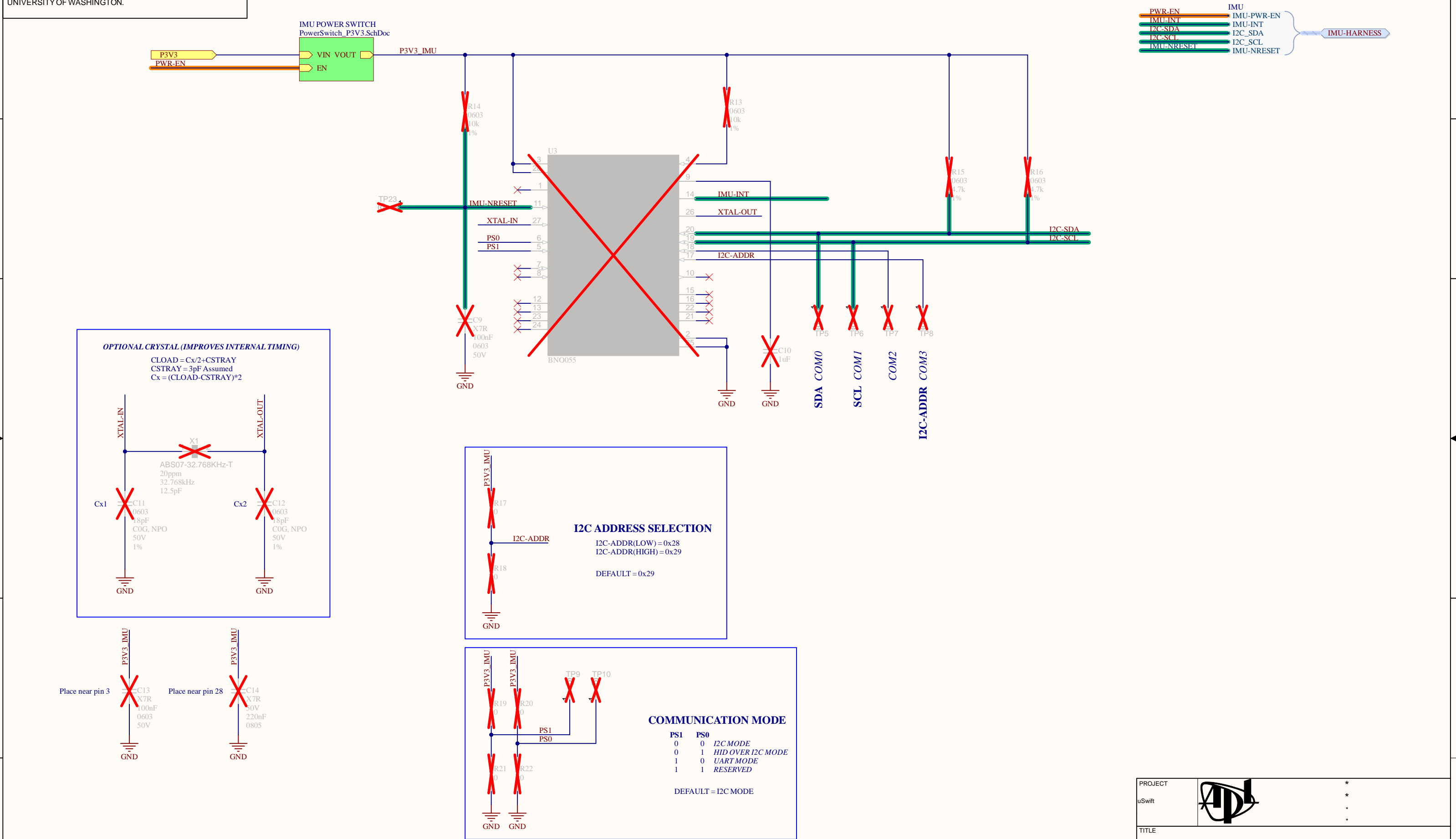
RockBLOCK 9603


The RockBLOCK 9603's header connector is a Molex PicoBlade 1.25mm pitch. The mating part is Molex part number 51021-1000.

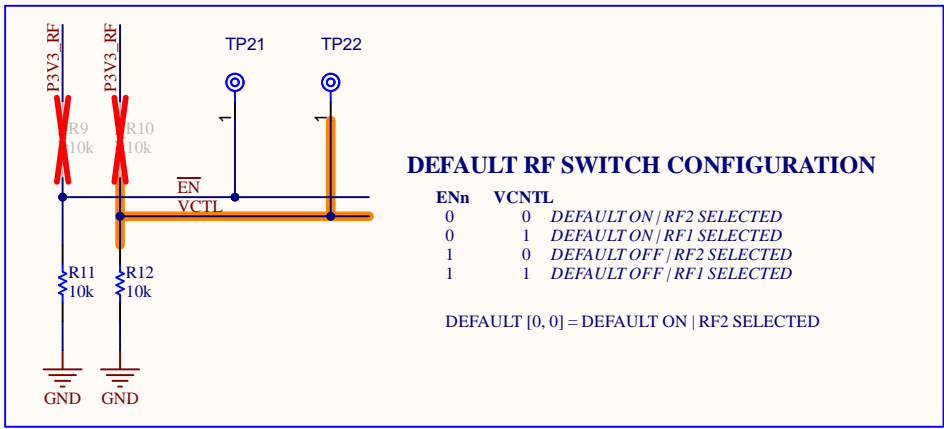
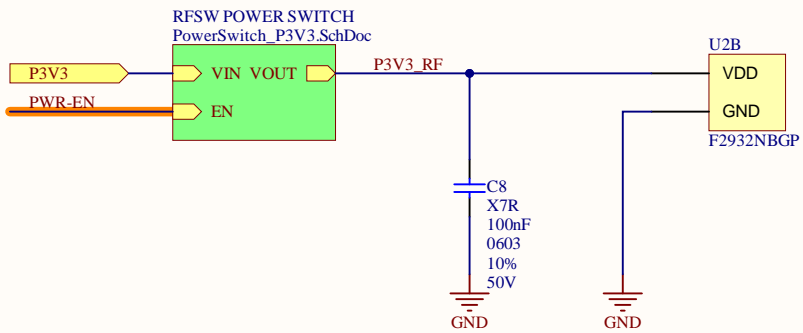
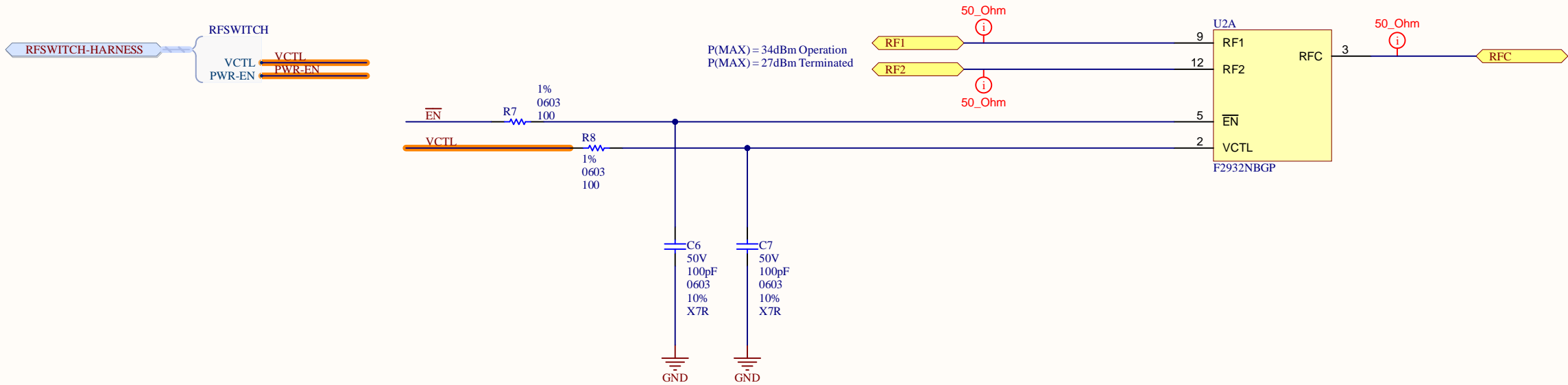


PicoBlade 1.25mm Header Interface on RockBLOCK 9603

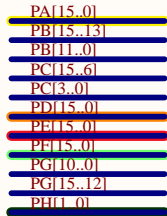
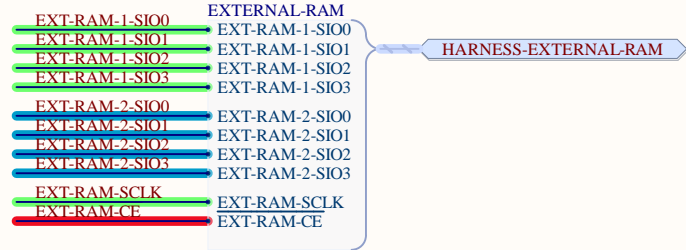
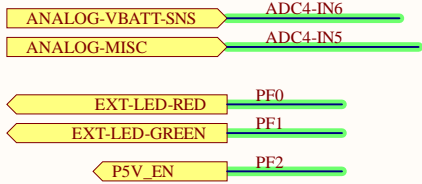
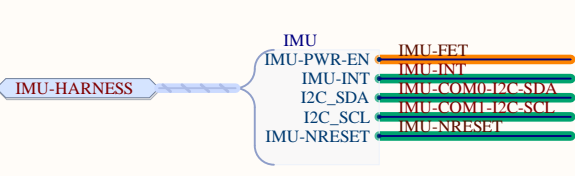
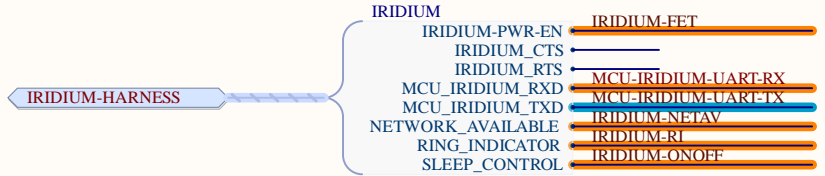
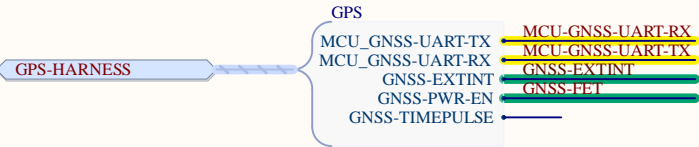
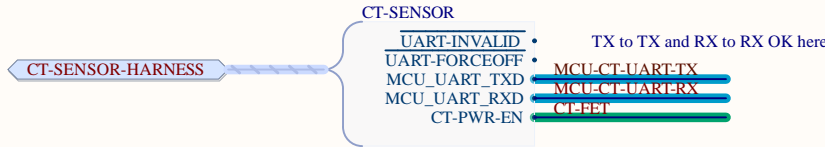
Pin	Label	Description
1	RXD	Iridium 9603N RX (output from RockBLOCK)
2	CTS	Iridium 9603N CTS (output from RockBLOCK)
3	RTS	Iridium 9603N RTS (input to RockBLOCK)
4	NetAv	Network Available signal
5	RI	Ring Indicator signal (active low)
6	TXD	Iridium 9603N TX (input to RockBLOCK)
7	OnOff	Sleep control (pull to ground to switch off)
8	5v In	5V power supply (450mA limit)
9	Li-Ion	3.7V power supply (450mA limit)
10	GND	Ground



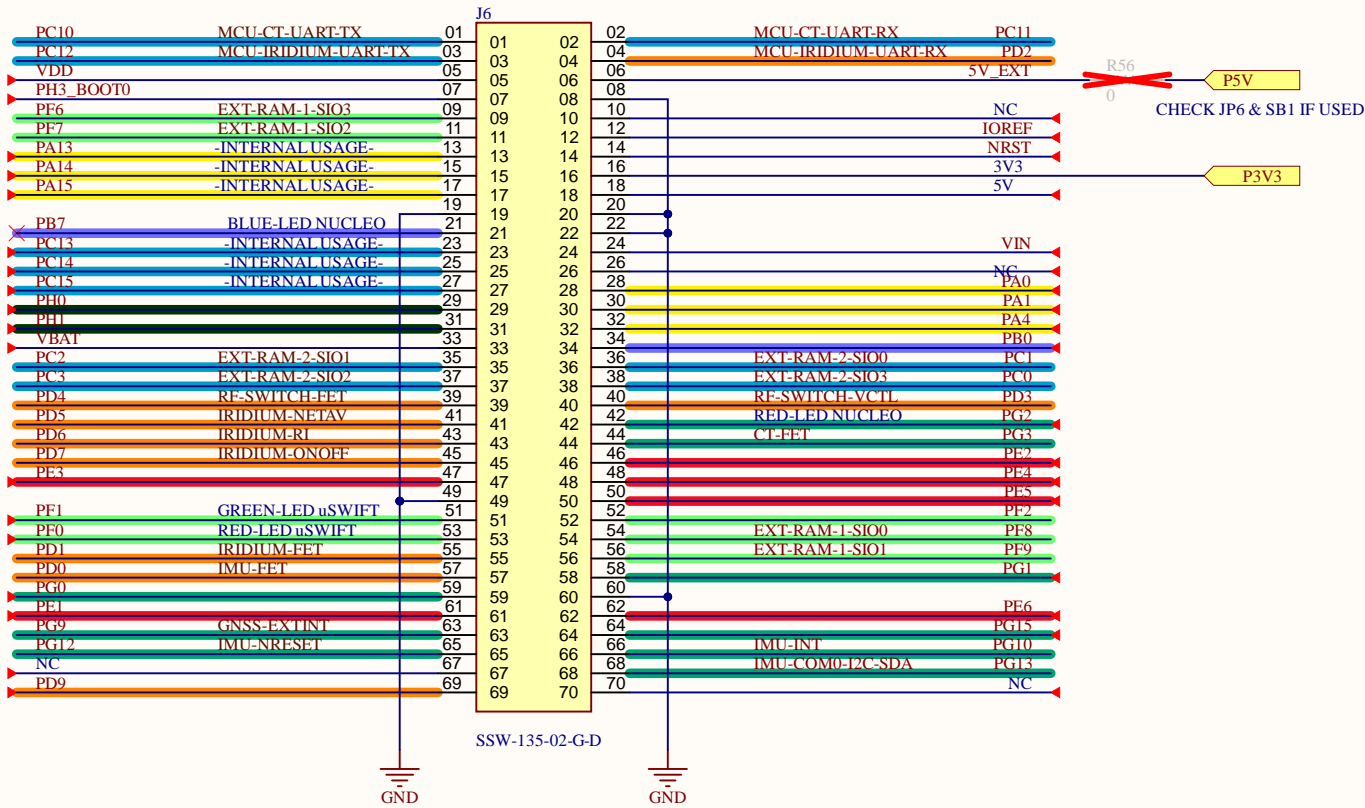
PROJECT				*
uSwift				*
				*
				*
TITLE				
IMU				
SIZE	CAGE CODE	DWG NO.		REV
B	98514	90039		2.1B
FILE NAME			SHEET	OF
IMU_SchDoc			15	18



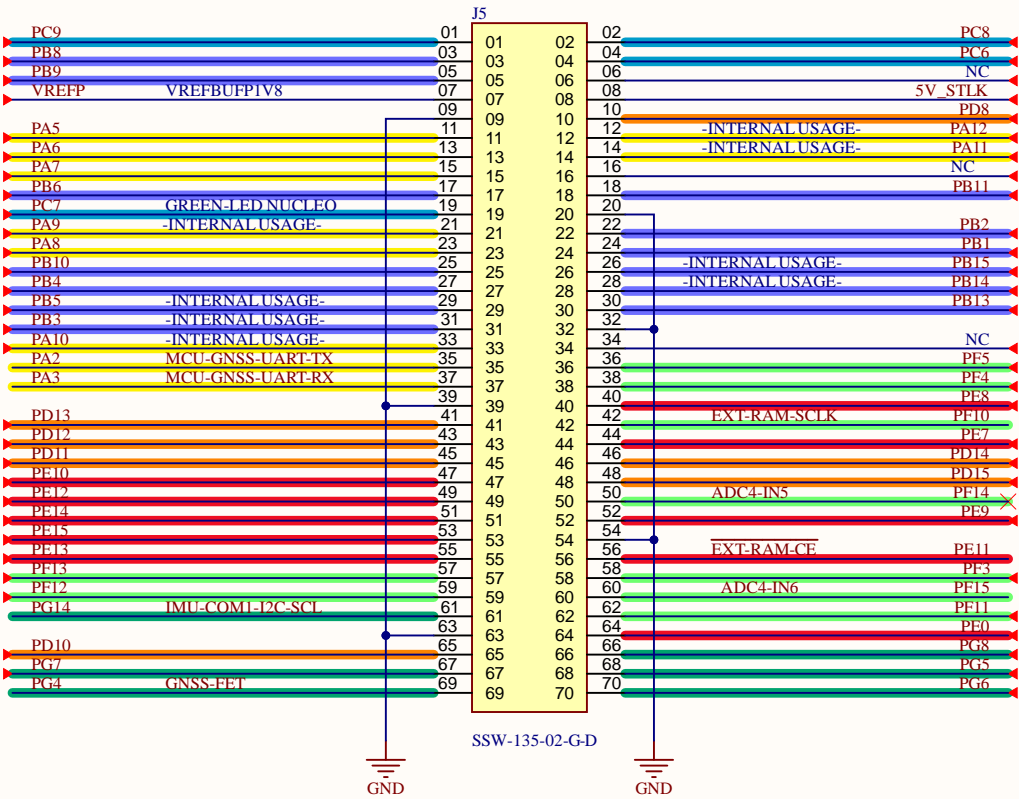
PROJECT		uSwift		APL		*	
TITLE		RF Switch (GPS or Iridium Modem)		SIZE		CAGE CODE	
REV		2.1		DWG NO.		90039	
FILE NAME		RFSwitchAnt.SchDoc		SHEET		16 OF 18	



ST MORPHO CN11



ST MORPHO CN12



STM32 POWER SOURC = 3V3 (CN11 PIN 16)

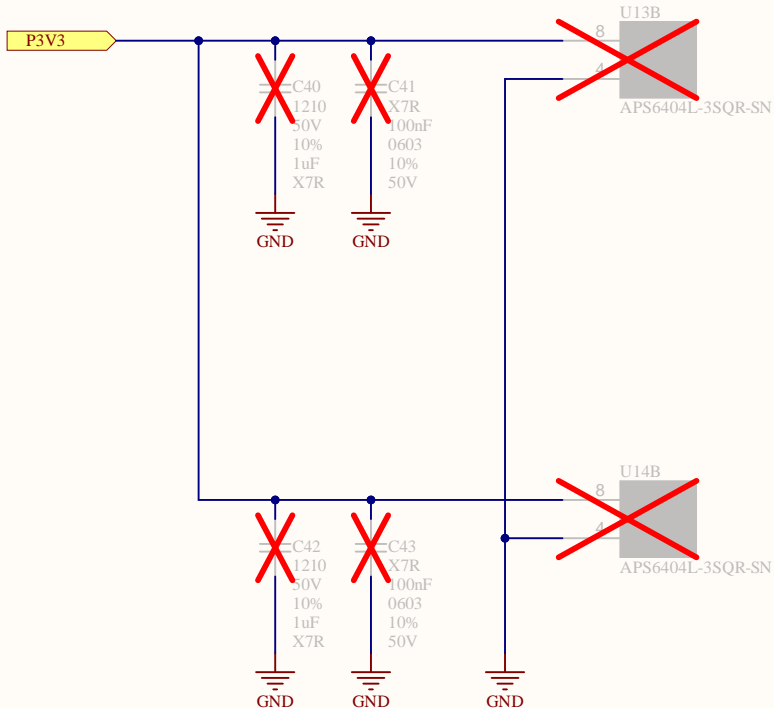
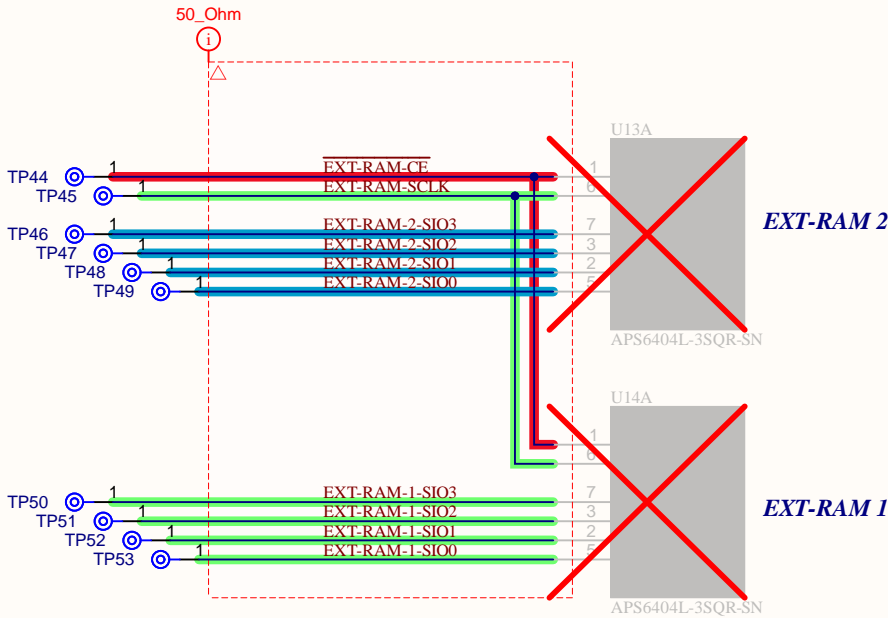
Nucleo-144 U575ZI-Q Power SB/Jumpers


MUST remove SB1  
MAY remove SB13  
JP4 set to 3V3 (1-2)  
JP6 set to 5V\_USB\_STLK (1-6)

PROJECT	*		
uSwift	*		
TITLE	STM32 Nucleo-144 U575ZI-Q Headers		
SIZE	CAGE CODE	DWG NO.	REV
B	98514	90039	2.1B
FILE NAME STM32-Nucleo-144_U575ZI-Q.SchDoc			SHEET 17 OF 18

HARNESSEXTERNAL-RAM

EXTERNAL-RAM  
EXT-RAM-CE  
EXT-RAM-SCLK  
EXT-RAM-2-SIO3  
EXT-RAM-2-SIO2  
EXT-RAM-2-SIO1  
EXT-RAM-2-SIO0  
EXT-RAM-1-SIO3  
EXT-RAM-1-SIO2  
EXT-RAM-1-SIO1  
EXT-RAM-1-SIO0



PROJECT			APPLIED PHYSICS LAB	
uSwift			UNIVERSITY OF WASHINGTON	
			1013 NE 40TH STREET SEATTLE, WA 98105	
TITLE				
STM32 External QSPI RAM				
SIZE	CAGE CODE	DWG NO.		REV
B	98514	90039		2.1B
FILE NAME			SHEET	OF
ExternalRam.SchDoc			18	18