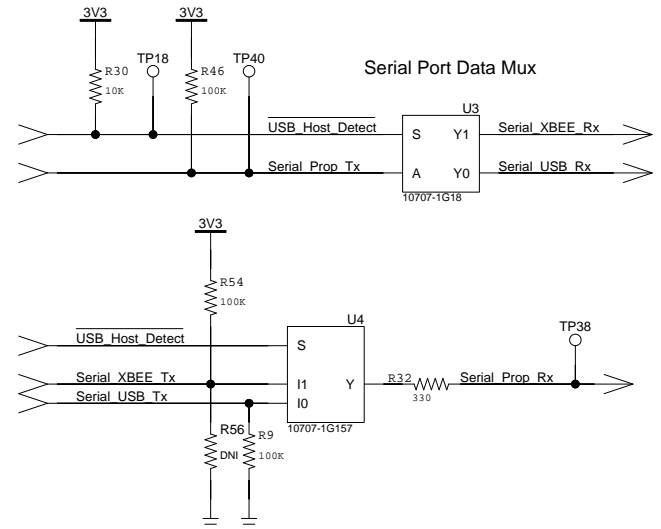
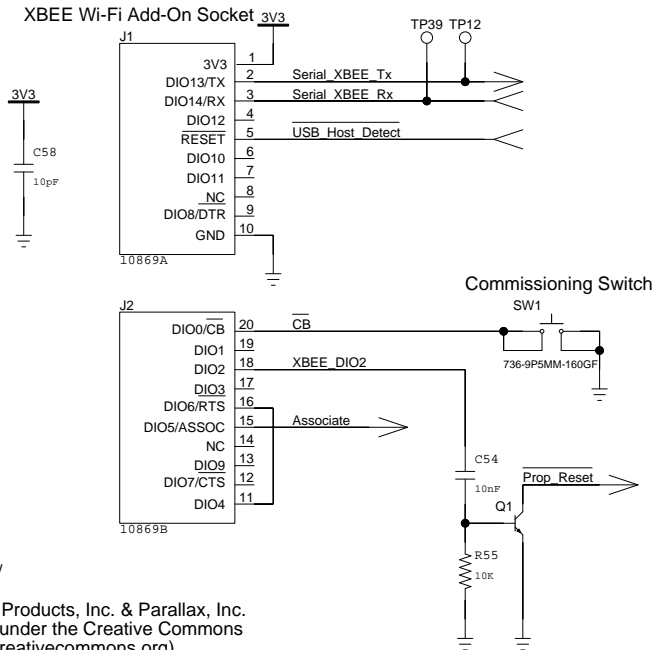
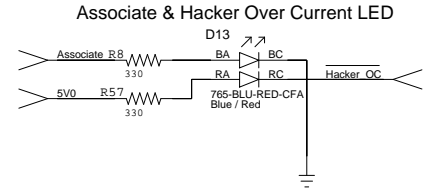
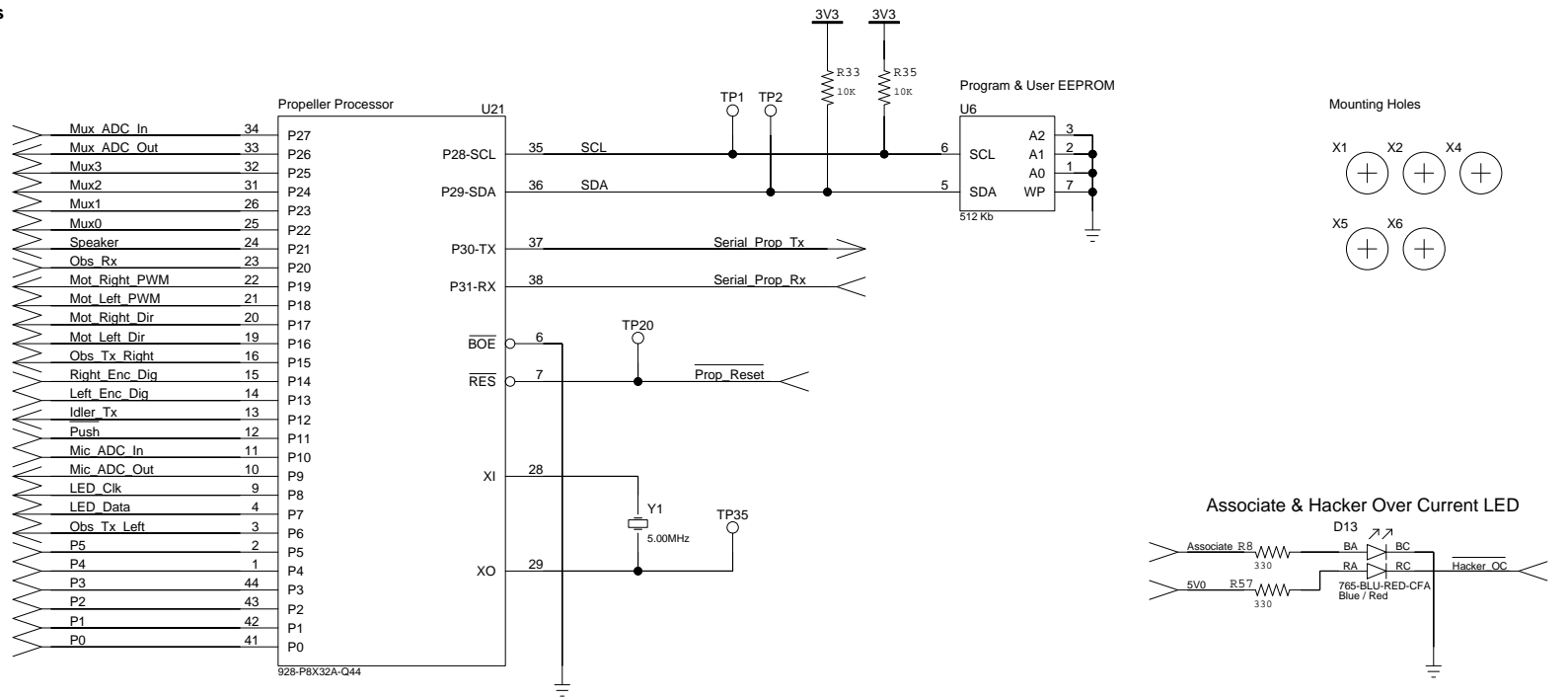


S3 Robot Electrical Schematics
Subversion Rev: 2591

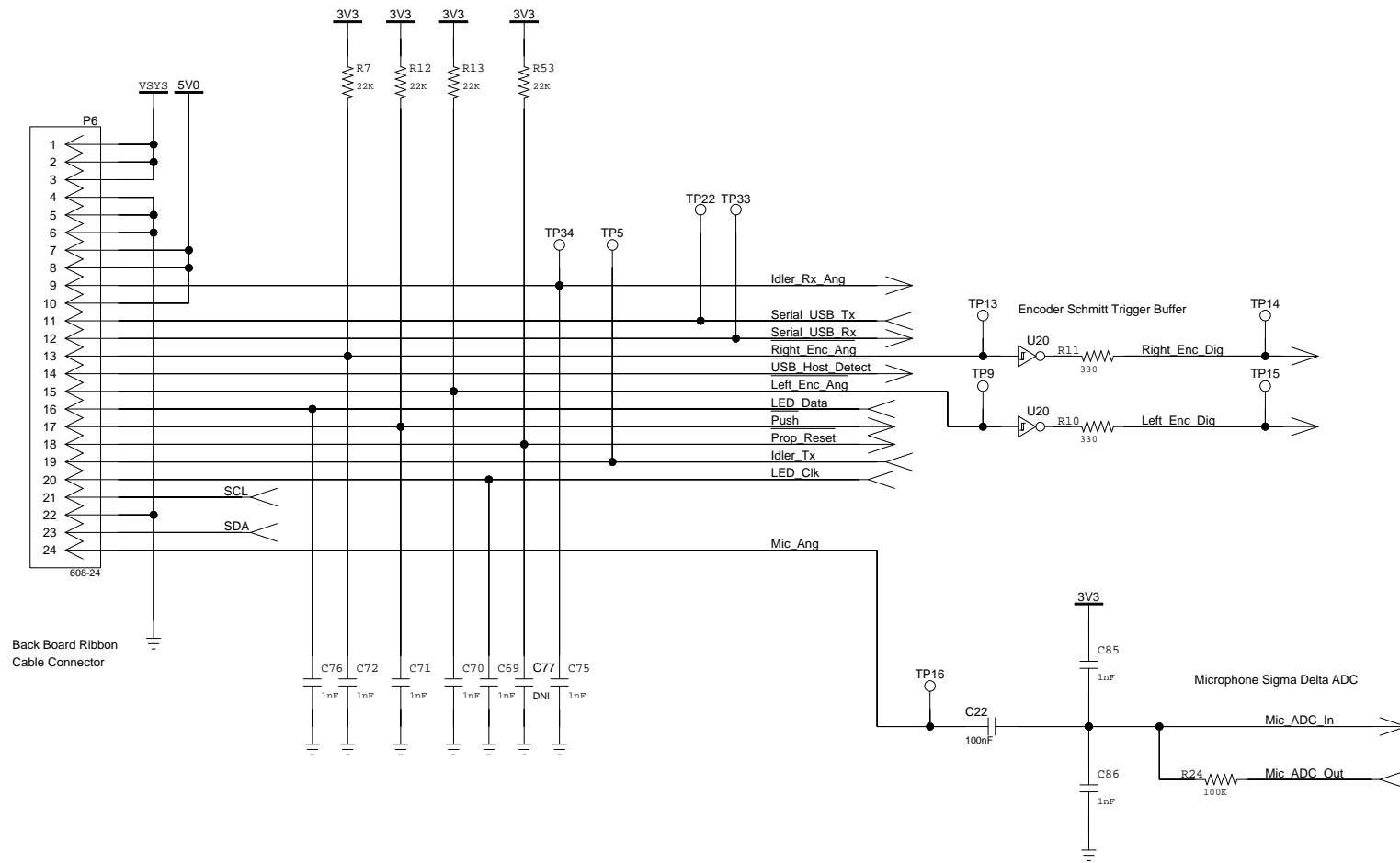


Designer: Ben Wirz
Element Products, Inc.
<http://www.elementinc.com/>

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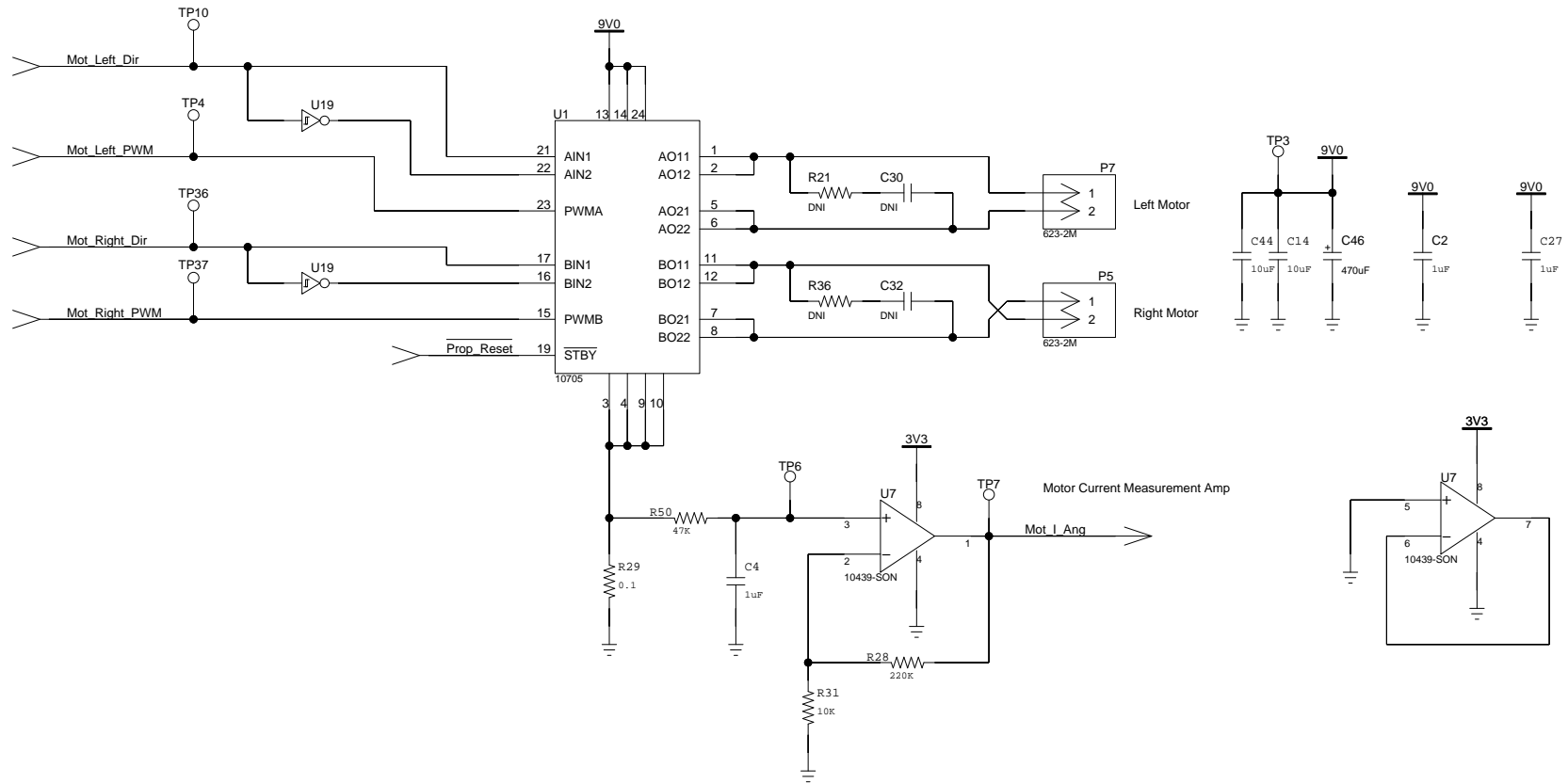
SIZE	DWG	PROJECT	
A		Scribblers3	
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	7	Scribblers3

Back Board Connector

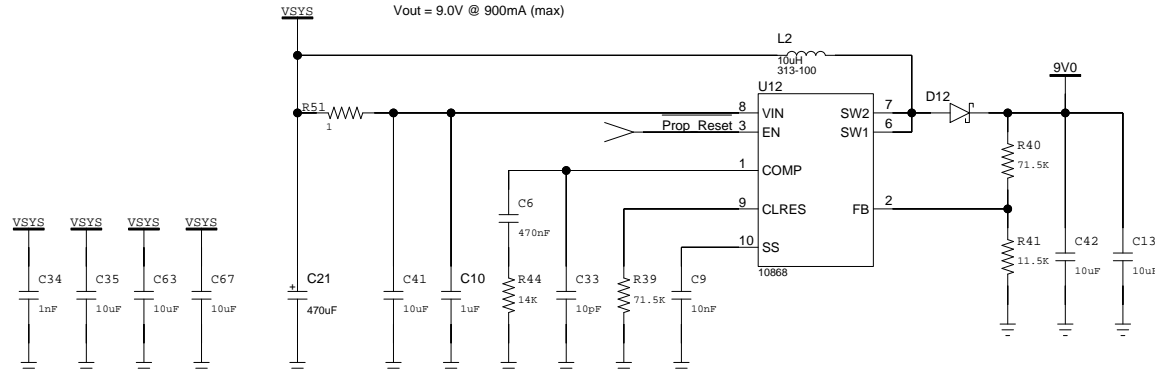


SIZE	DWG	10858B_Front_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	2	7	Scribblers3

Motor Driver Bridge

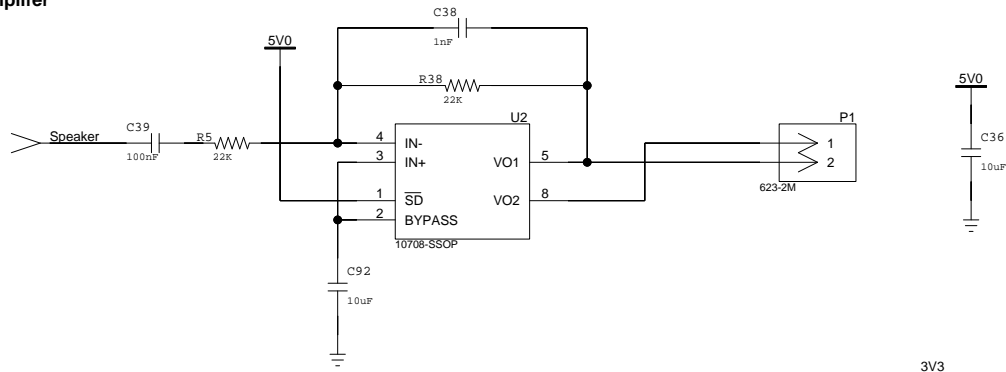


Motor Driver Boost Switching Regulator
Vout = 9.0V @ 900mA (max)

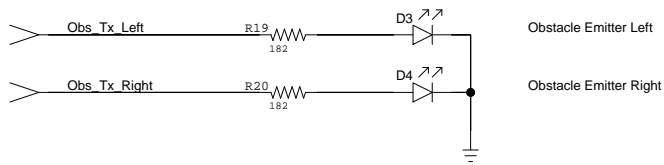


SIZE	DWG	10858B_Front_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	3	7	Scribblers3

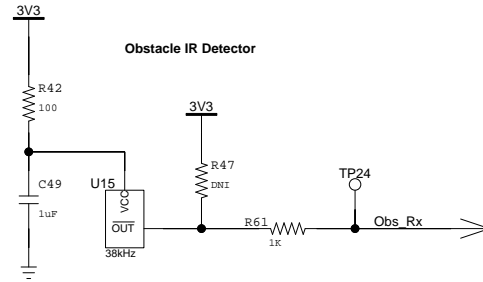
Speaker Amplifier



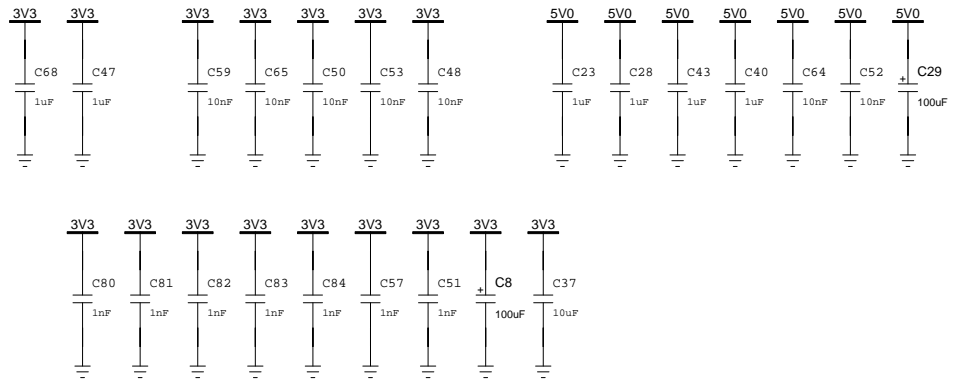
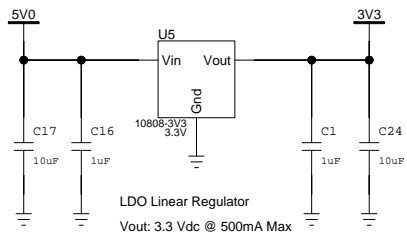
Obstacle IR Emitters



Obstacle IR Detector

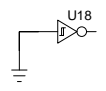
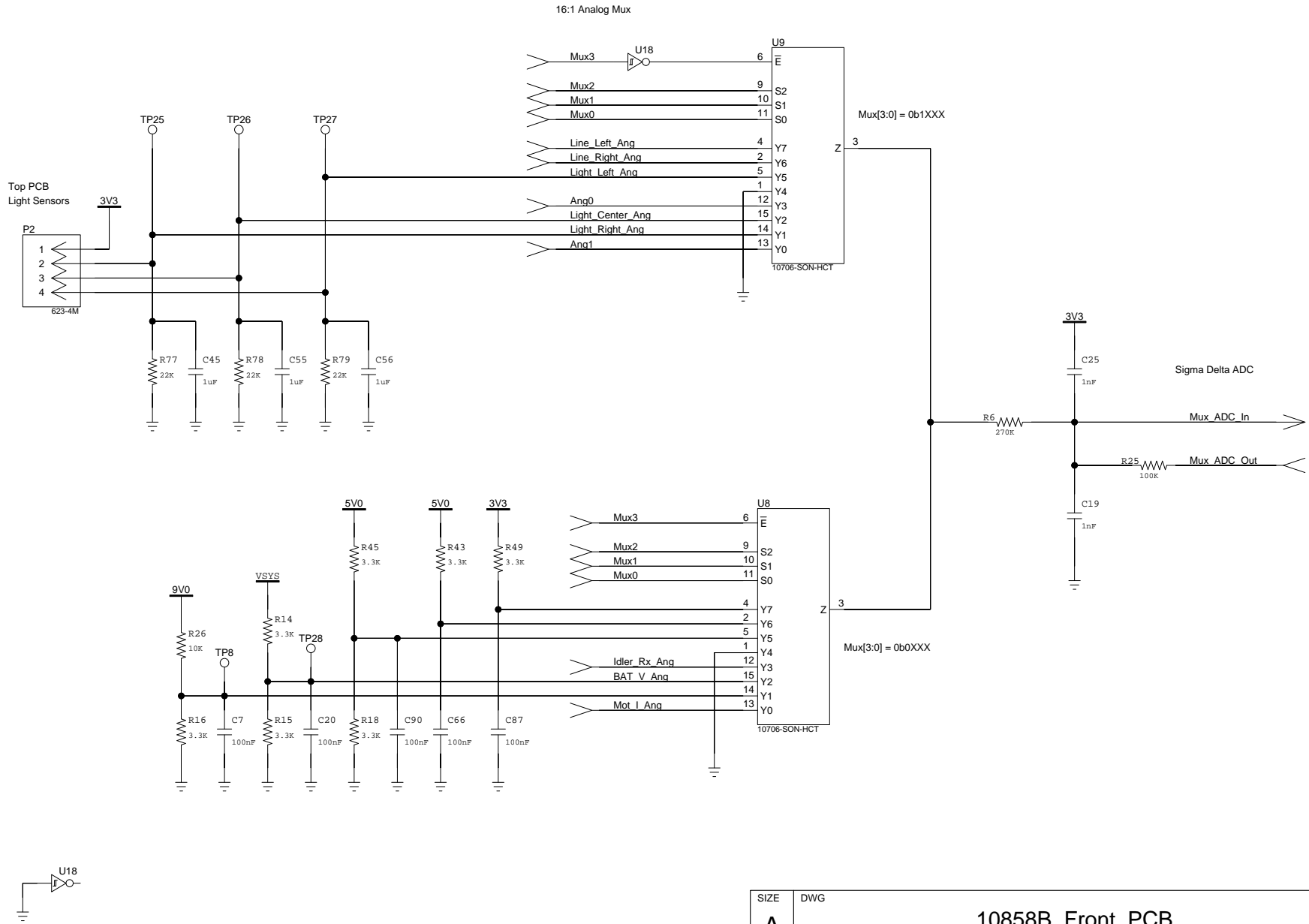


3V3 Power Supply



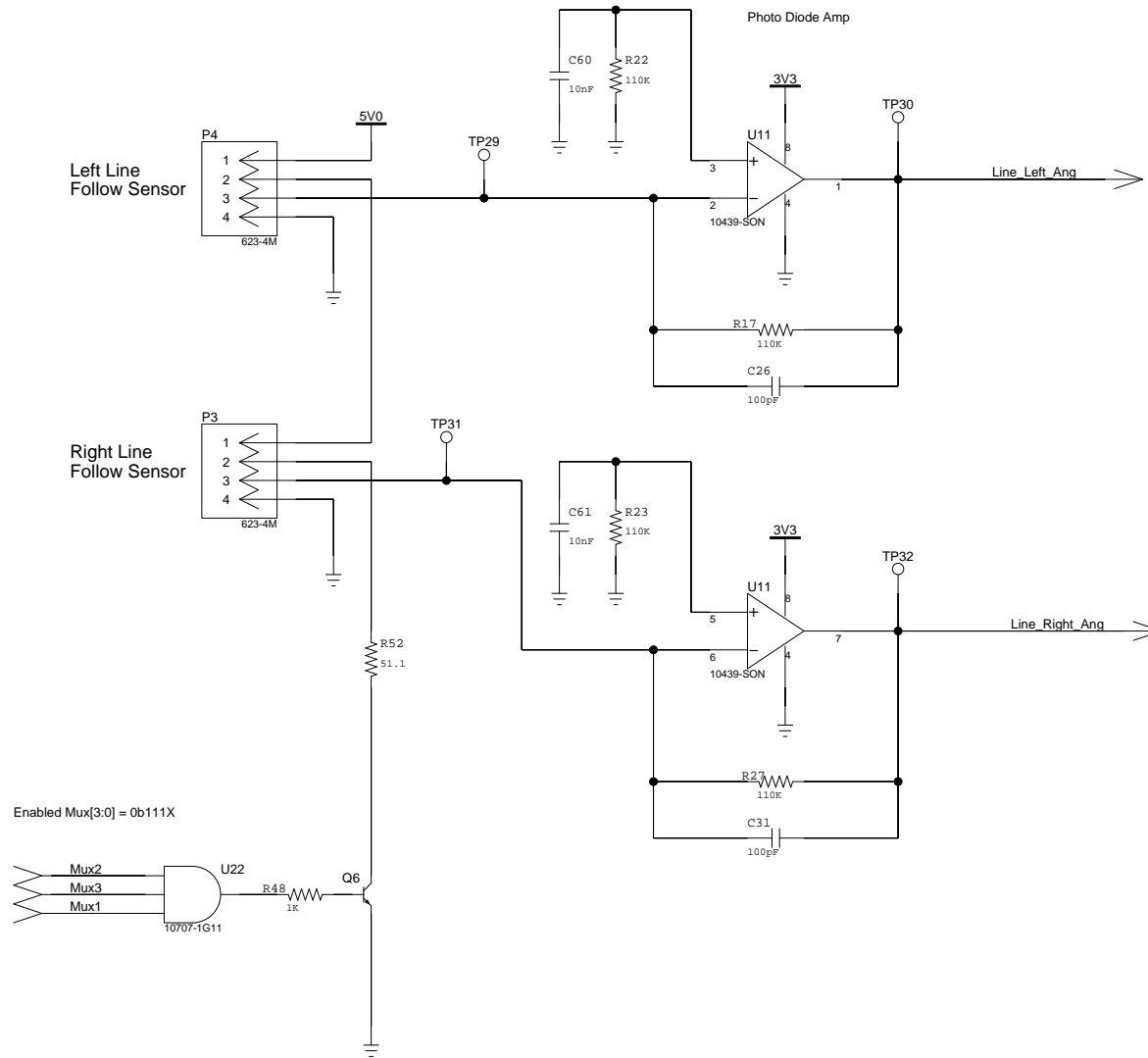
SIZE	DWG		
A	10858B_Front_PCB		
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	4	7	Scribblers3

16 Channel Sigma Delta ADC



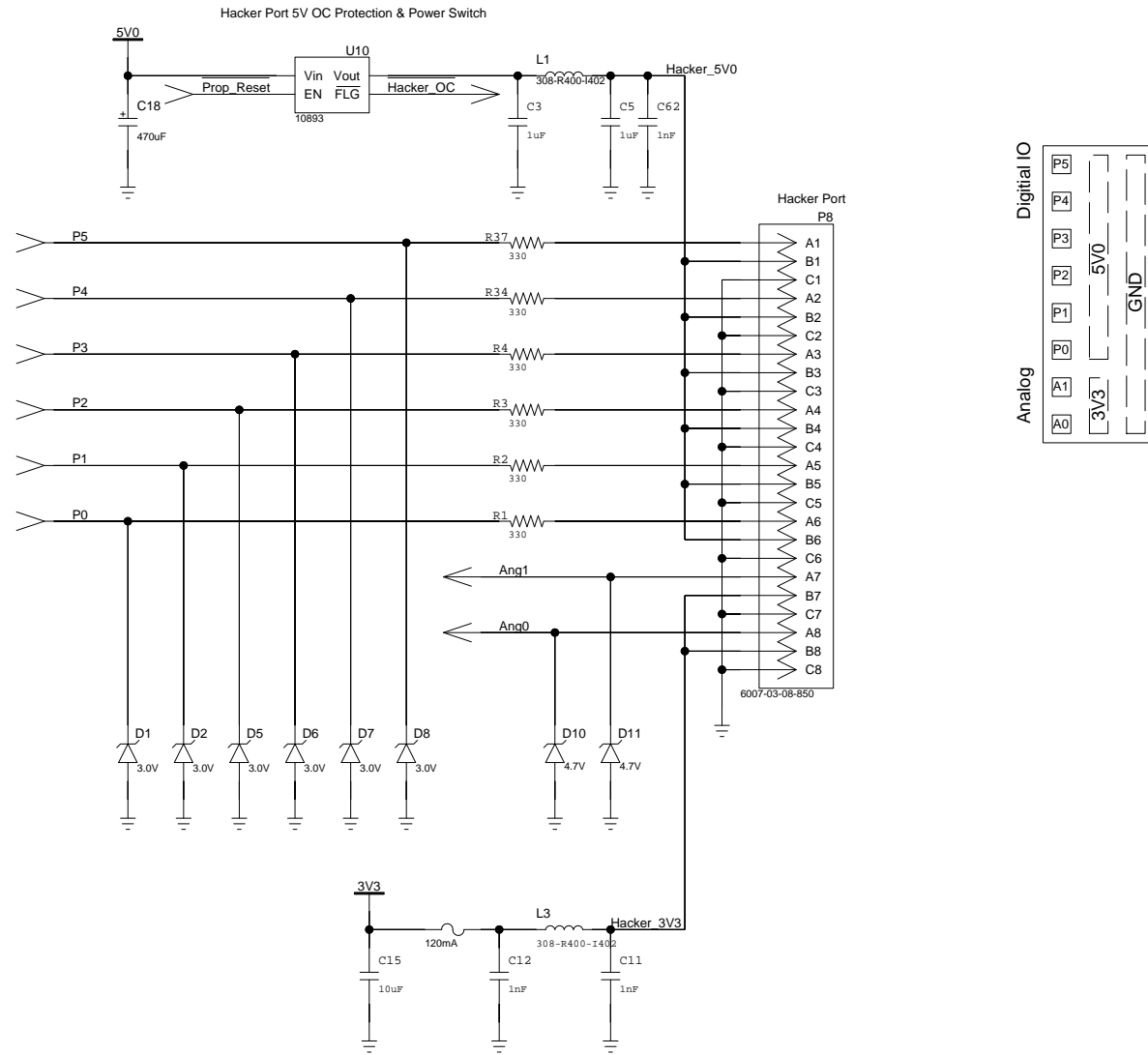
SIZE	DWG	10858B_Front_PCB		
A				
DRAWN BY	SHEET	OF	PROJECT	
B. WIRZ	5	7	Scribblers3	

Line Follow Sensor Interface



SIZE	DWG	10858B_Front_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	6	7	Scribblers3

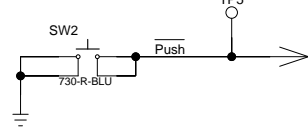
Hacker Port Interface



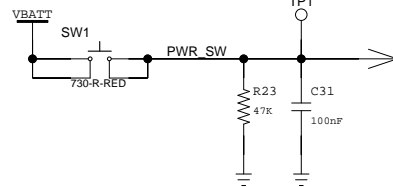
SIZE	DWG		
A		10858B_Front_PCB	
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	7	7	Scribbler3

Back PCB

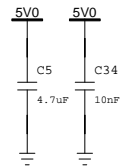
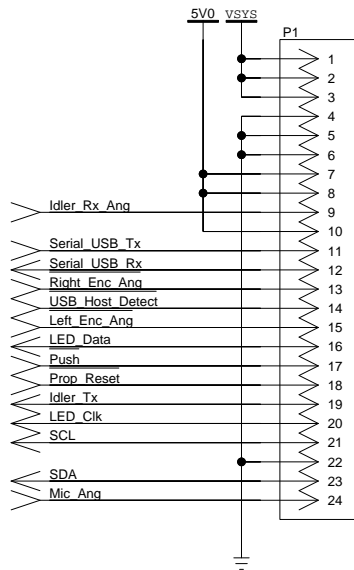
User Push Button Switch



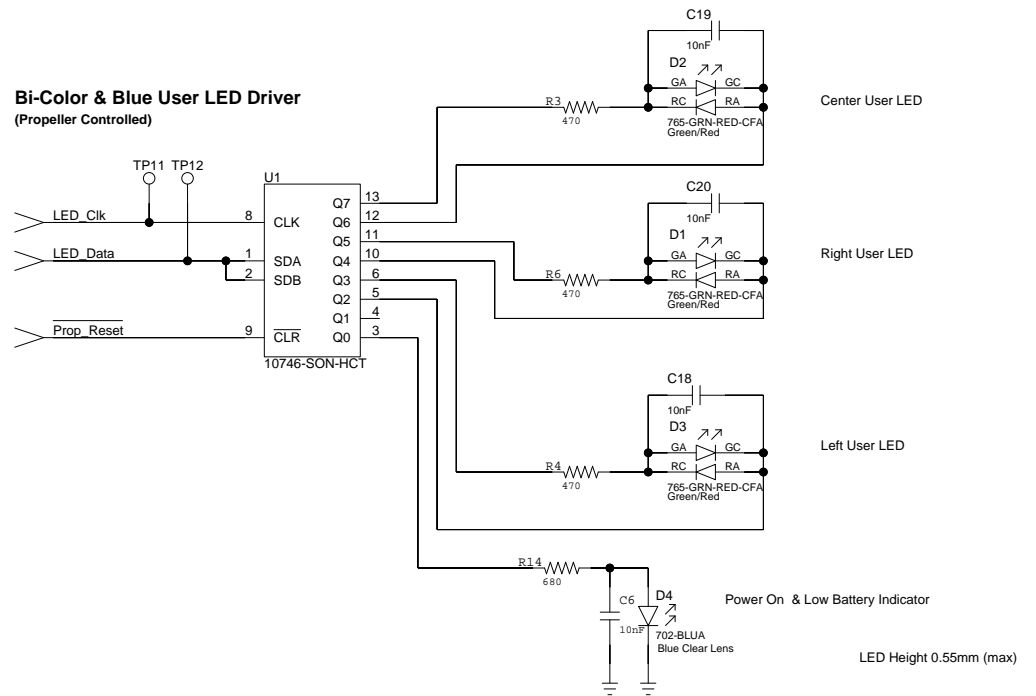
Soft Power Push Button Switch



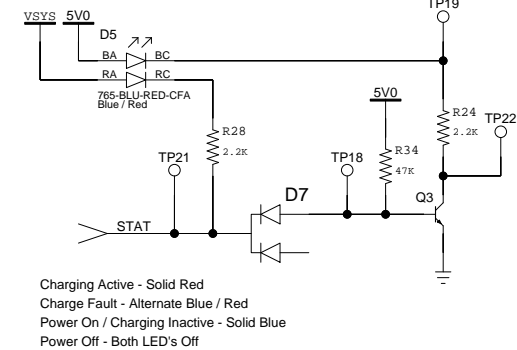
Main Board Ribbon Cable



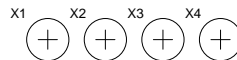
Bi-Color & Blue User LED Driver
(Propeller Controlled)



Power & Charge Status LED's
(Hardware Controlled)

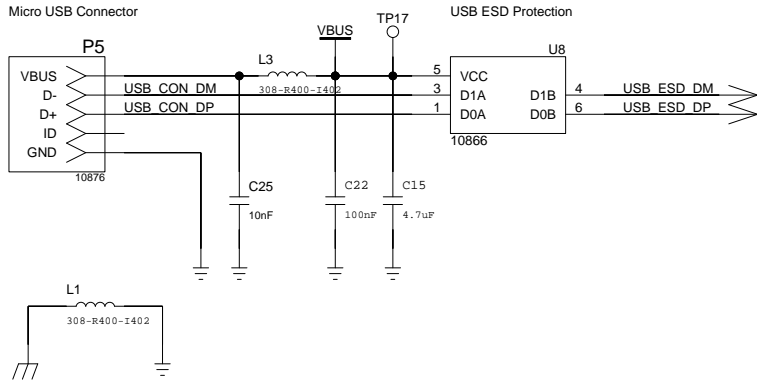


Charging Active - Solid Red
Charge Fault - Alternate Blue / Red
Power On / Charging Inactive - Solid Blue
Power Off - Both LED's Off

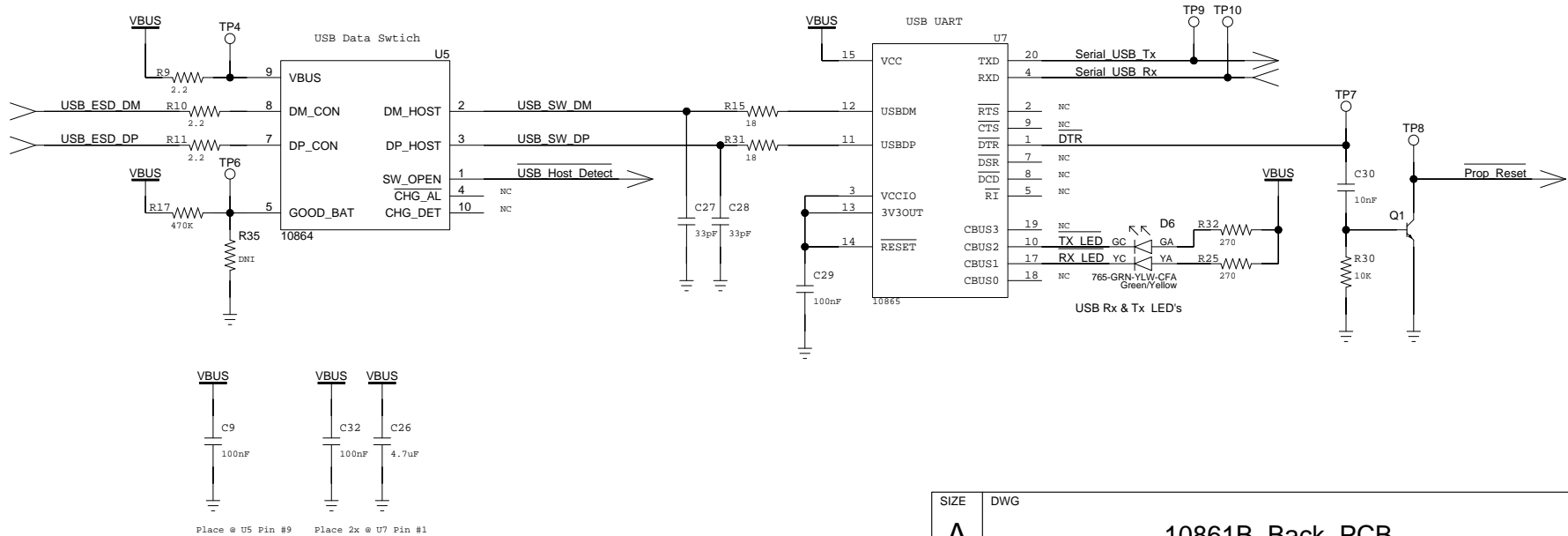


SIZE	DWG	10861B_Back_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	4	Scribbler3

USB Protection, Data Switch & Serial Converter



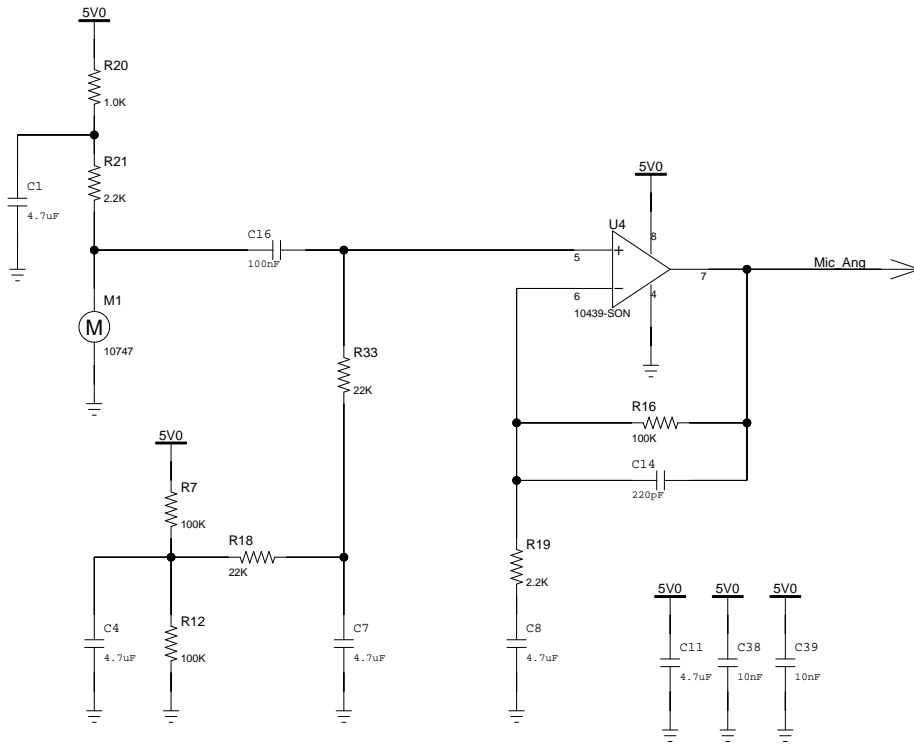
AC Short USB Shield to Digital Gnd



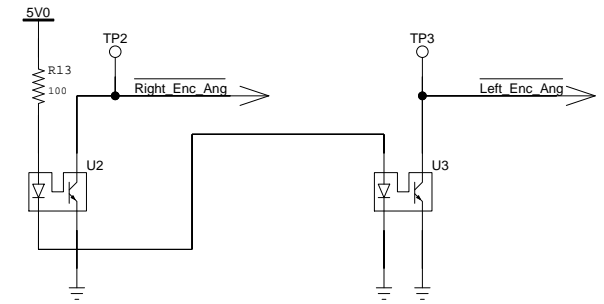
Place @ U5 Pin #9 Place 2x @ U7 Pin #1

SIZE	DWG	10861B_Back_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	2	4	Scribblers3

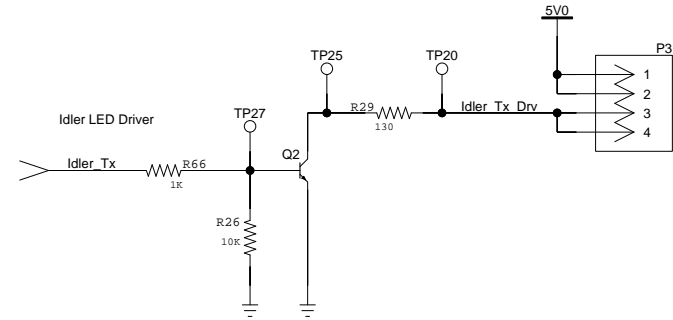
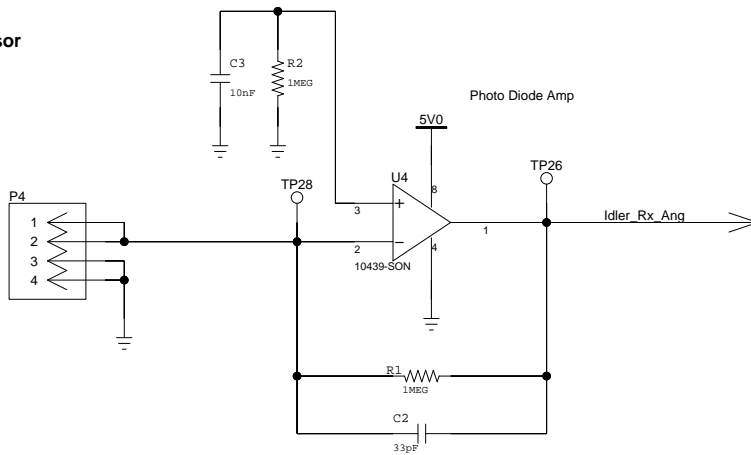
Microphone Pre-Amp



Motor Break Beam Encoders

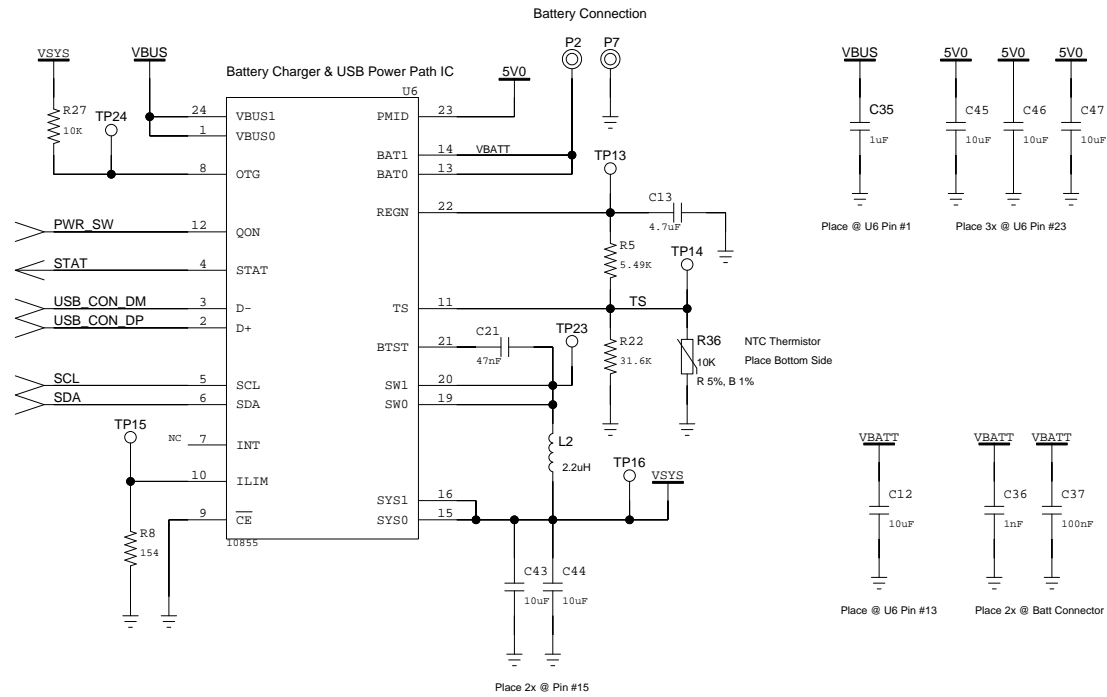


Idler Wheel Break Beam Sensor

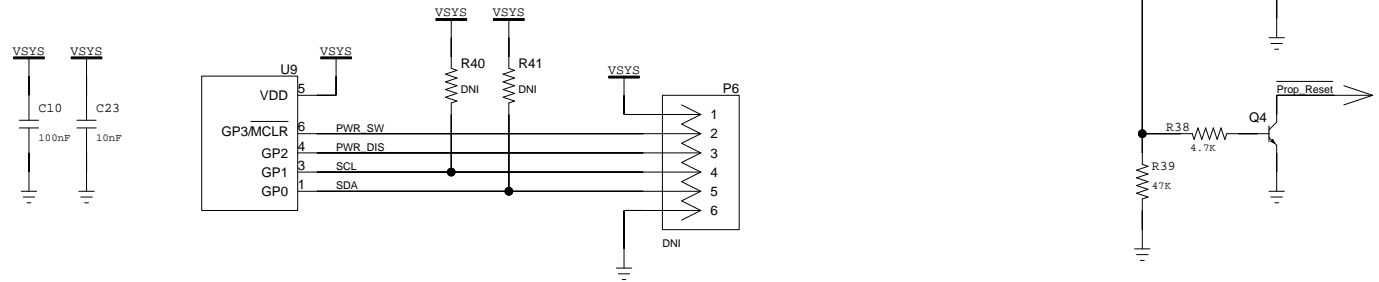


SIZE	DWG	10861B_Back_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	3	4	Scribbler3

Battery Charger & Power Path

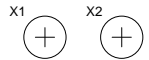
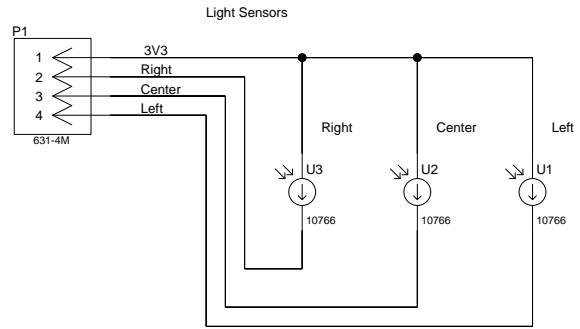


Soft Power Switch Controller



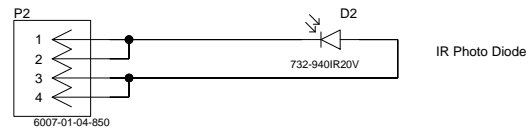
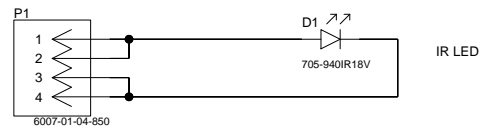
SIZE	DWG	10861B_Back_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	4	4	Scribbler3

Top Light Sensor PCB



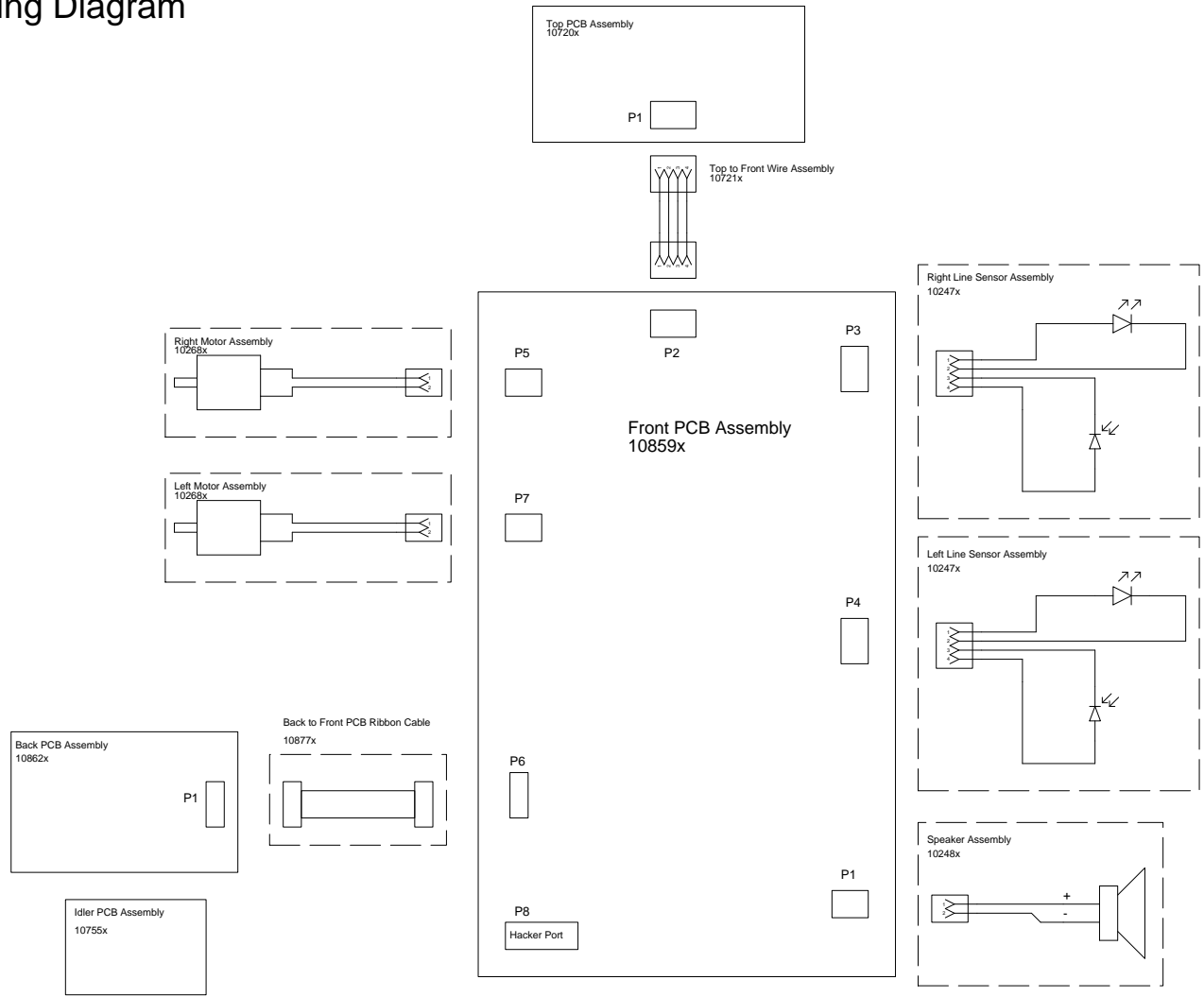
SIZE	DWG	10719C_Top_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Idler Wheel Stall Detector

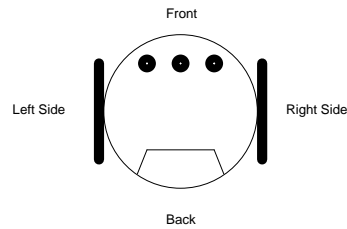


SIZE	DWG	10754B_Idler_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

S3 Cabling Diagram

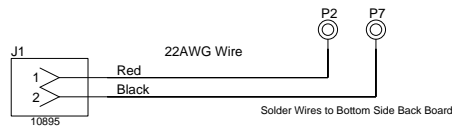


S3 Top View



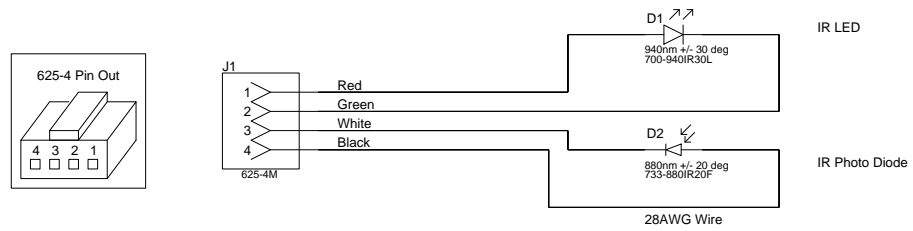
SIZE	DWG		
A	S3_Cabling_Diagram		
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Battery Wire Diagram



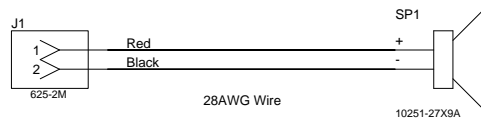
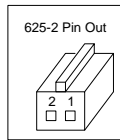
SIZE	DWG	10863A_Battery_Wire		
A				
DRAWN BY	SHEET	OF	PROJECT	
B. WIRZ	1	1	Scribbler3	

Line Sensor Wire Diagram



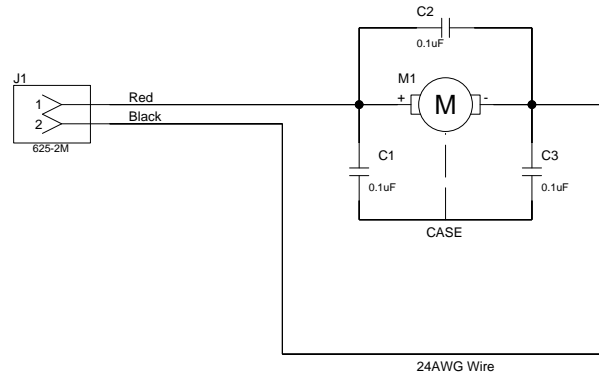
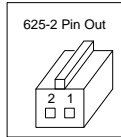
SIZE	DWG	10247G_Line_Sensor_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Speaker Wire Diagram



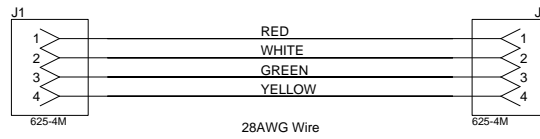
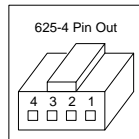
SIZE	DWG	10248C_Speaker_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Motor Wire Diagram



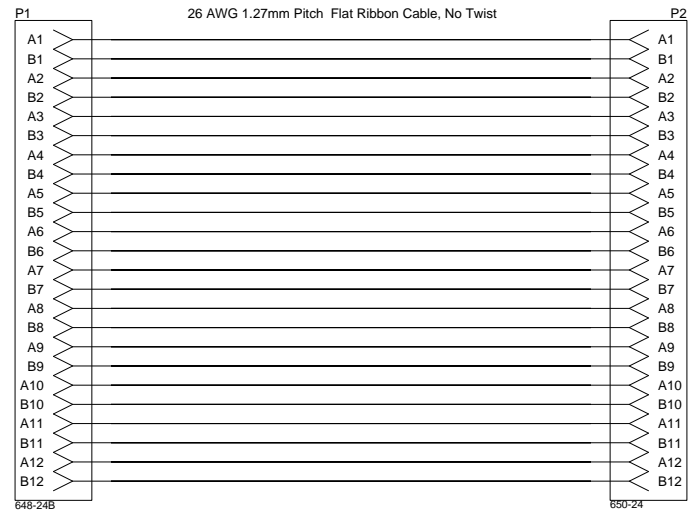
SIZE	DWG	10268E_Motor_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Top PCB (10719) to Front PCB (10858) Wire Diagram



SIZE	DWG	10721A_Top_PCB_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Front PCB to Back PCB Ribbon Cable Assembly



Connect Front Board @ P6

Solder Back Board @ P1

SIZE	DWG	10877B_Ribbon_Cable	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3