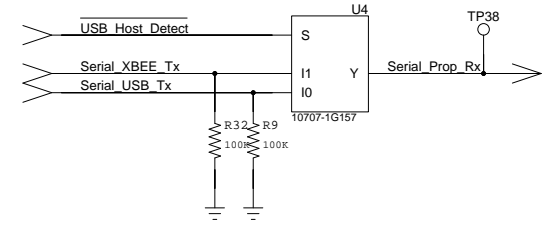
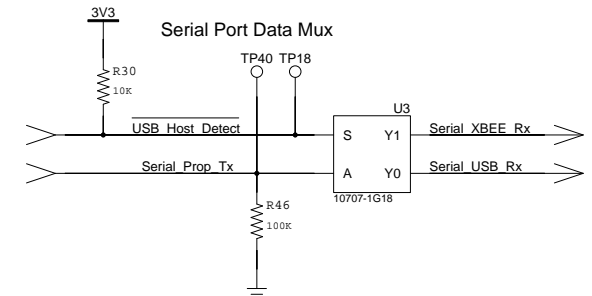
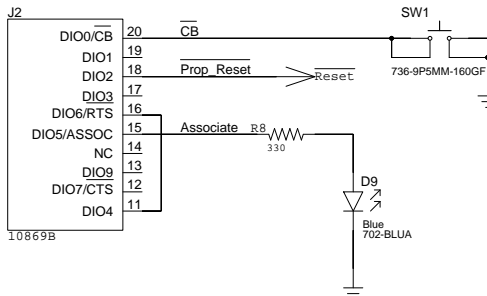
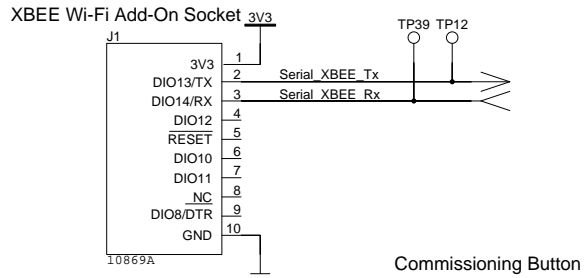
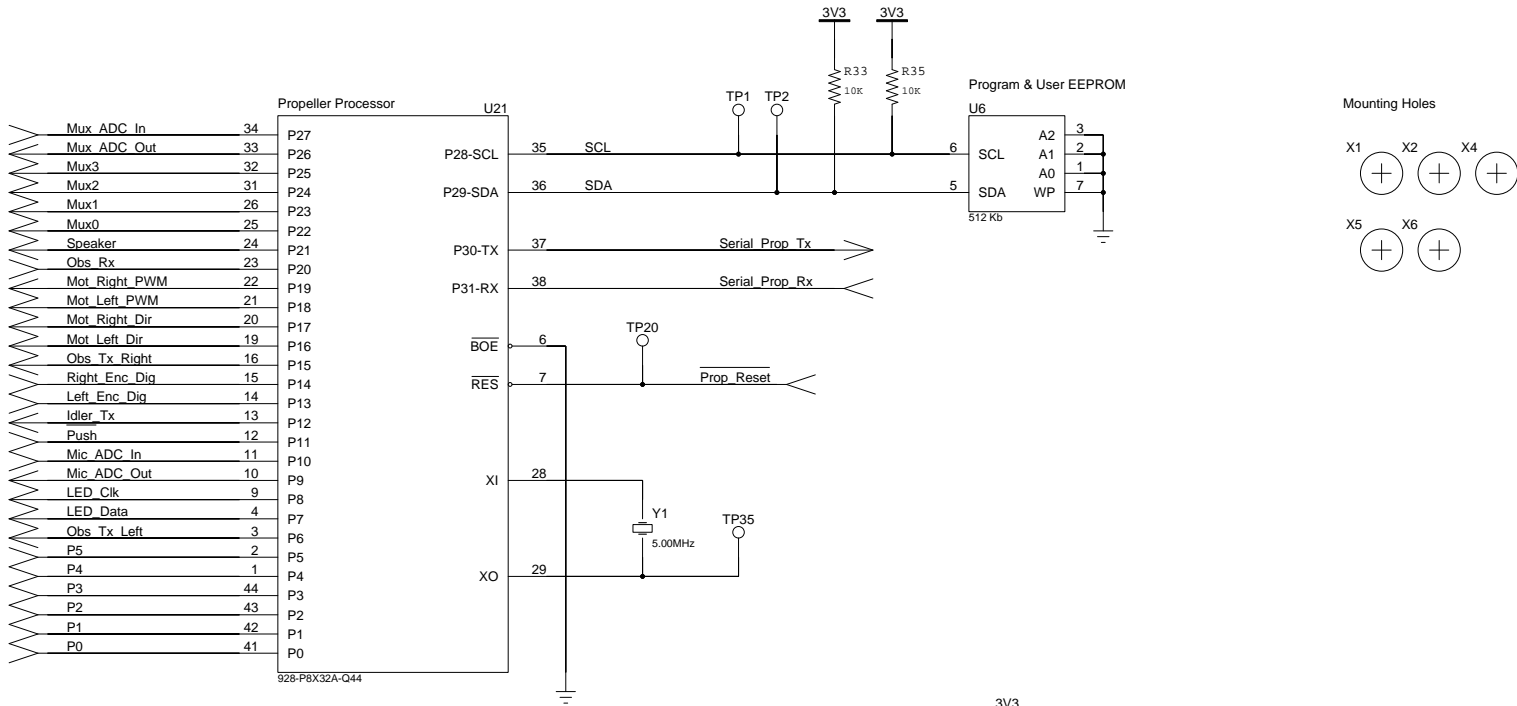


S3 Robot Electrical Schematics
Subversion Rev: 2569

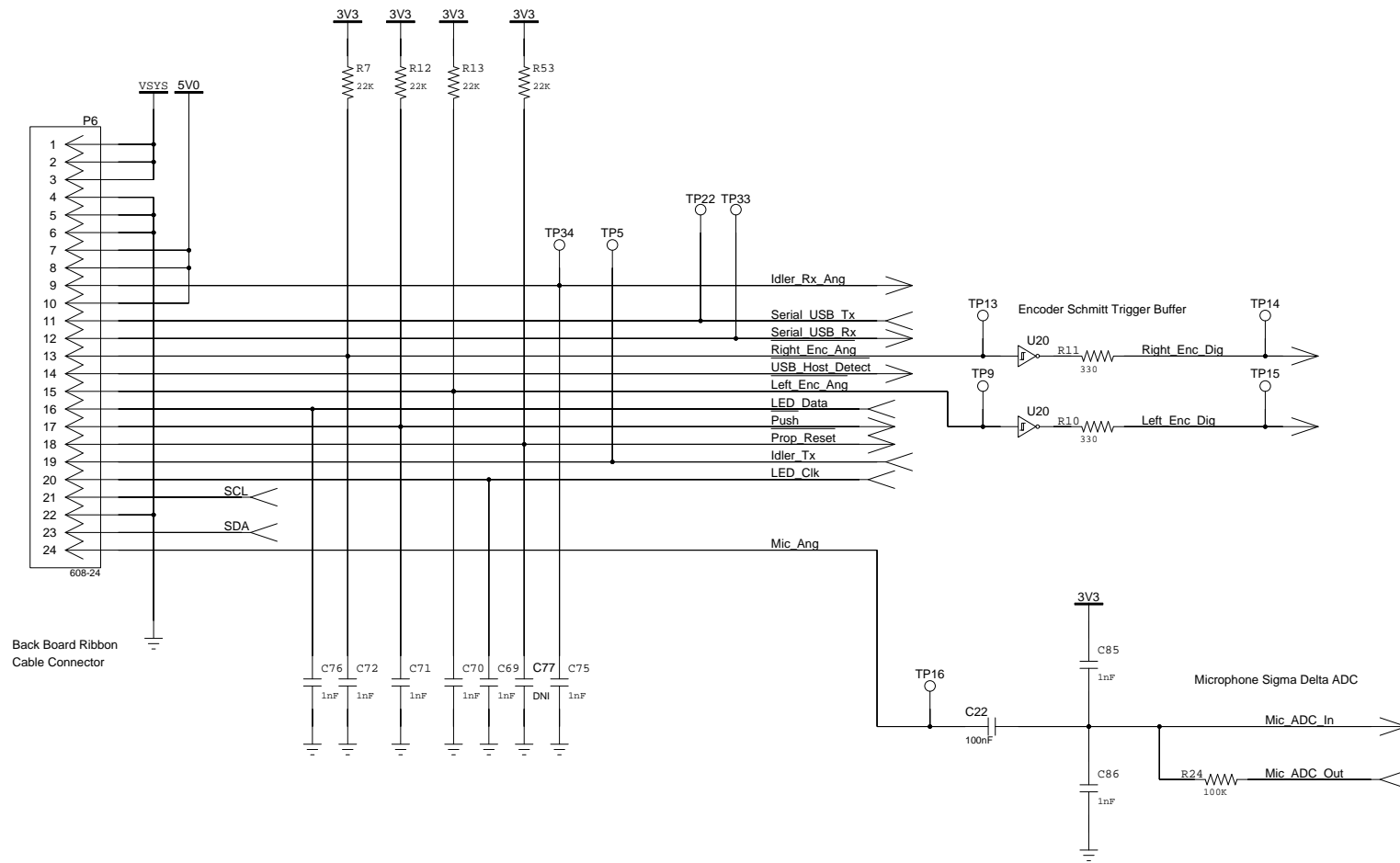


Designer: Ben Wirz
Element Products, Inc.
<http://www.elementinc.com/>

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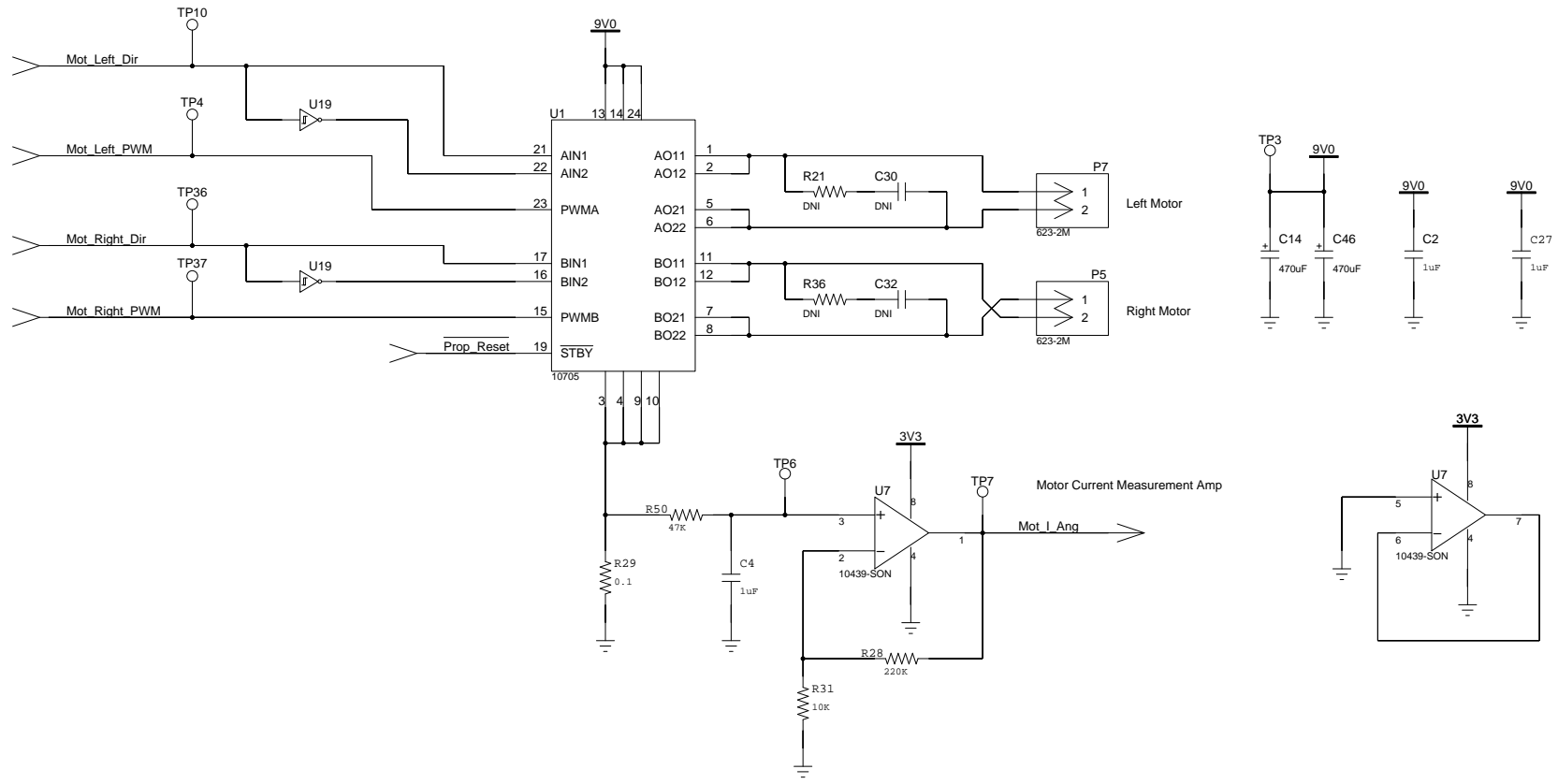
SIZE	DWG		
A	10858A_Front_PCB		
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	7	Scribblers3

Back Board Connector

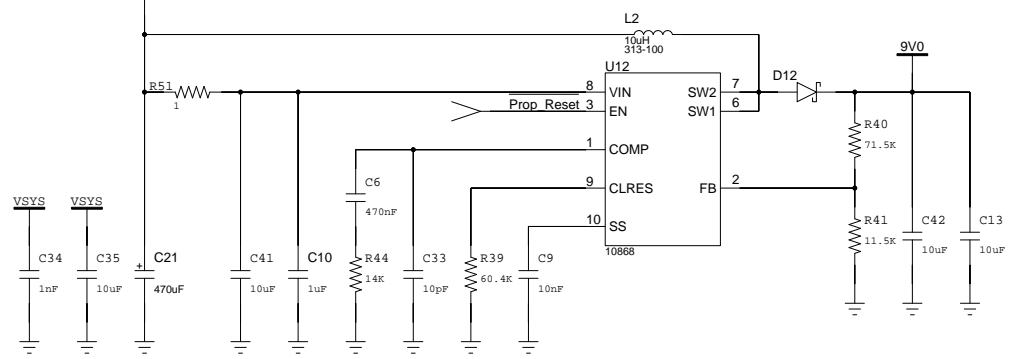


SIZE	DWG	10858A_Front_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	2	7	Scribblers3

Motor Driver Bridge

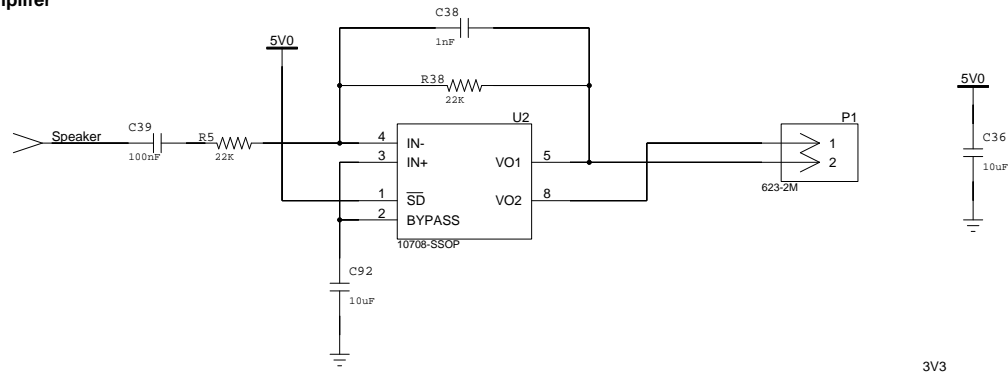


Motor Driver Boost Switching Regulator Vout = 9.0V @ 900mA (max)

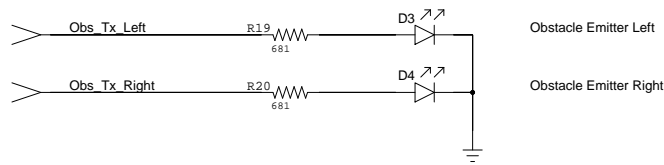


SIZE	DWG	10858A_Front_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	3	7	Scribblers3

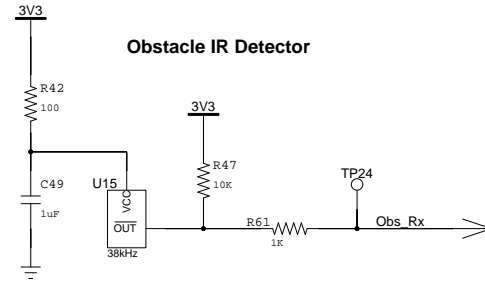
Speaker Amplifier



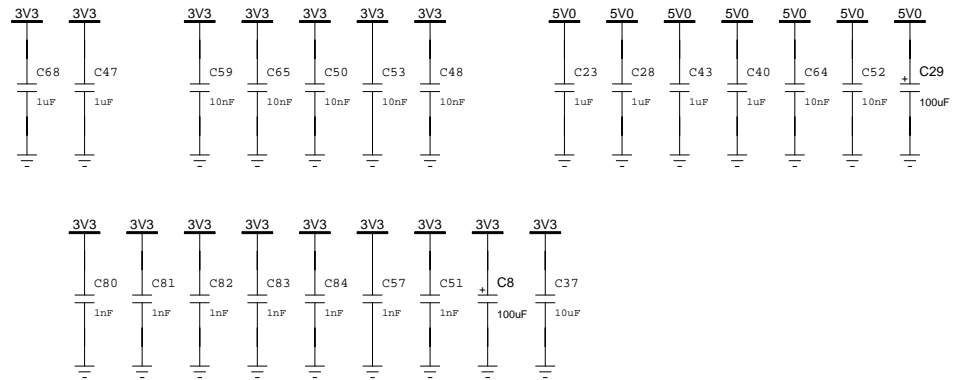
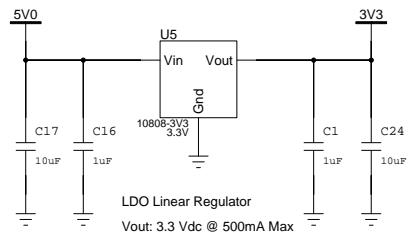
Obstacle IR Emitters



Obstacle IR Detector

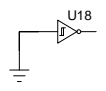
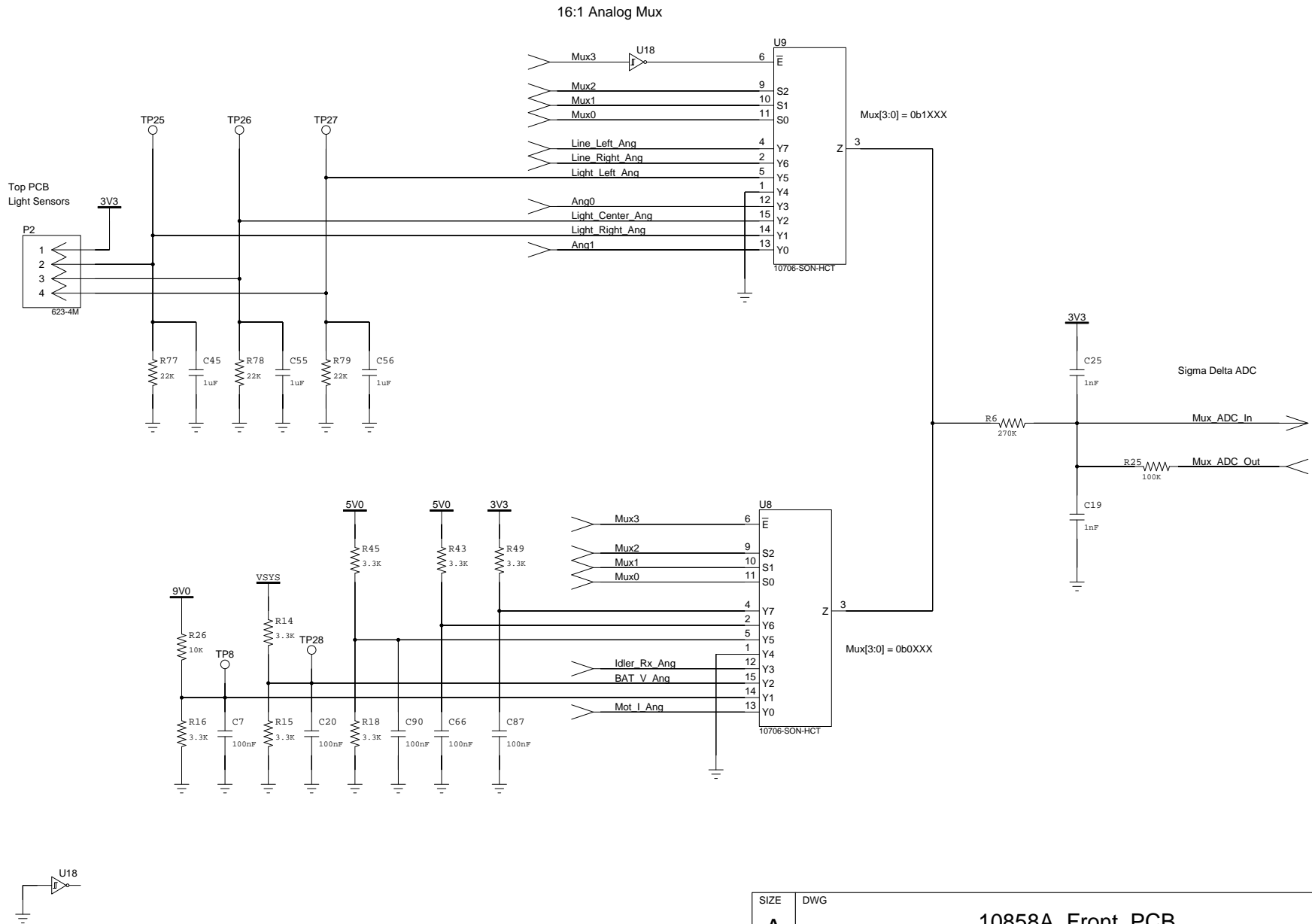


3V3 Power Supply



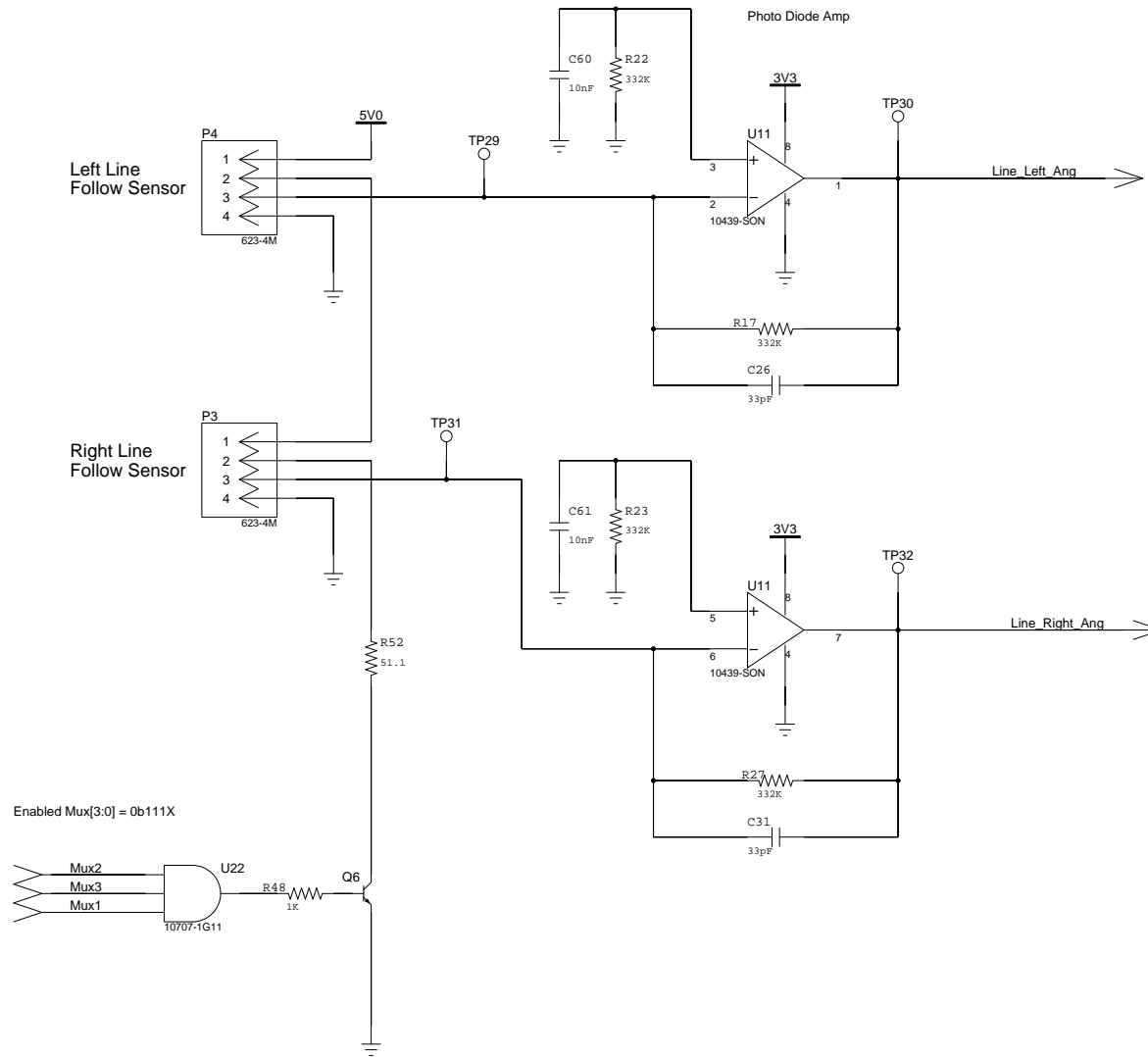
SIZE	DWG	
A	10858A_Front_PCB	
DRAWN BY	SHEET	PROJECT
B. WIRZ	4 OF 7	Scribber3

16 Channel Sigma Delta ADC



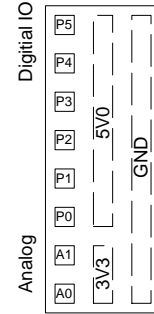
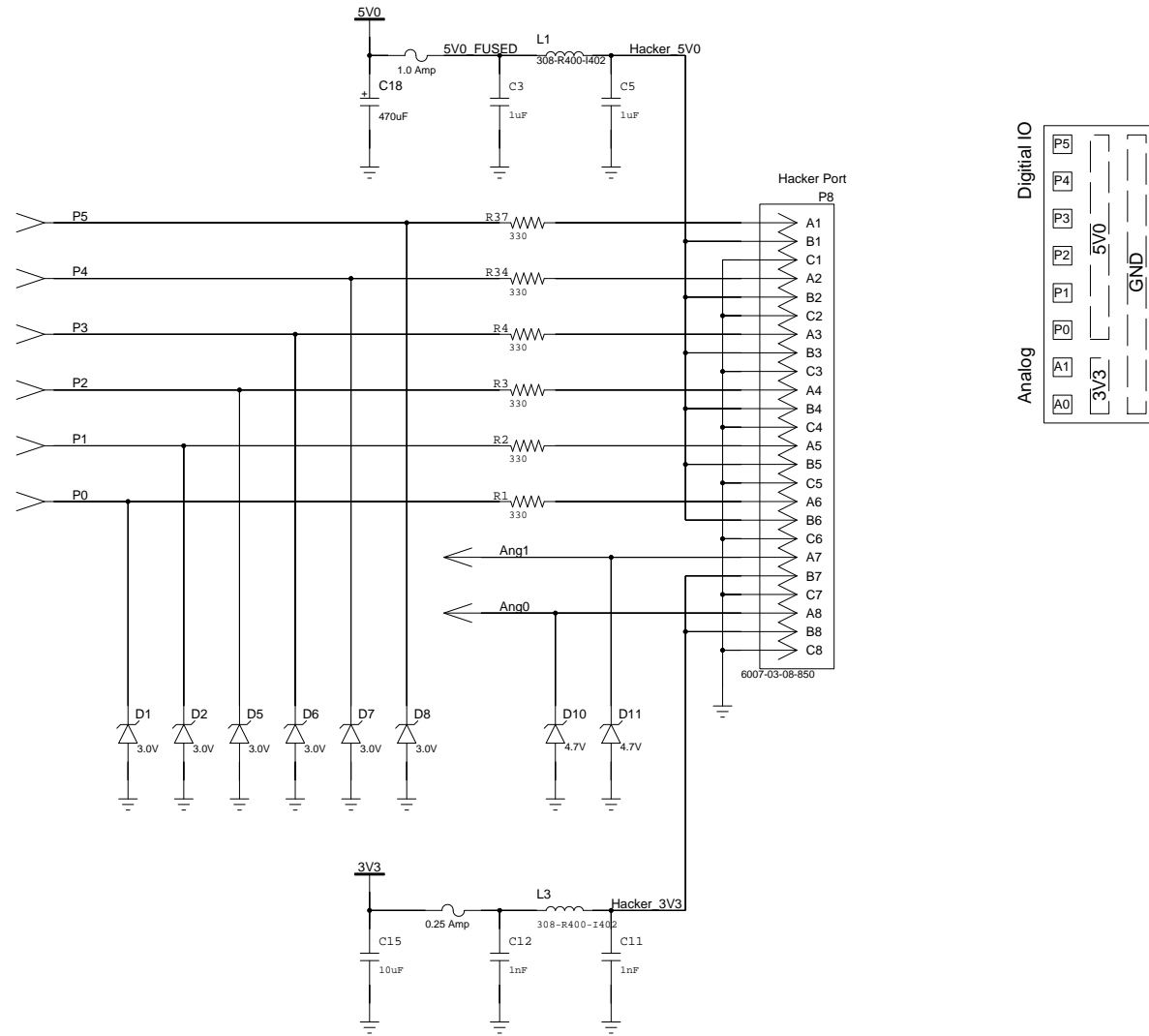
SIZE	DWG	10858A_Front_PCB		
A				
DRAWN BY	SHEET	OF	PROJECT	
B. WIRZ	5	7	Scribblers3	

Line Follow Sensor Interface



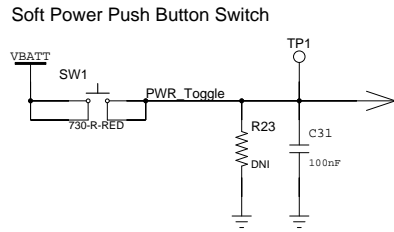
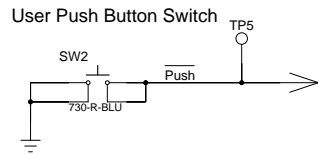
SIZE	DWG	10858A_Front_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	6	7	Scribblers3

Hacker Port Interface

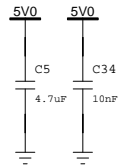
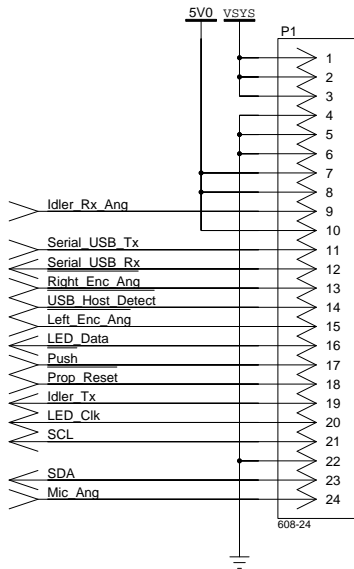


SIZE	DWG	10858A_Front_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	7	7	Scribbler3

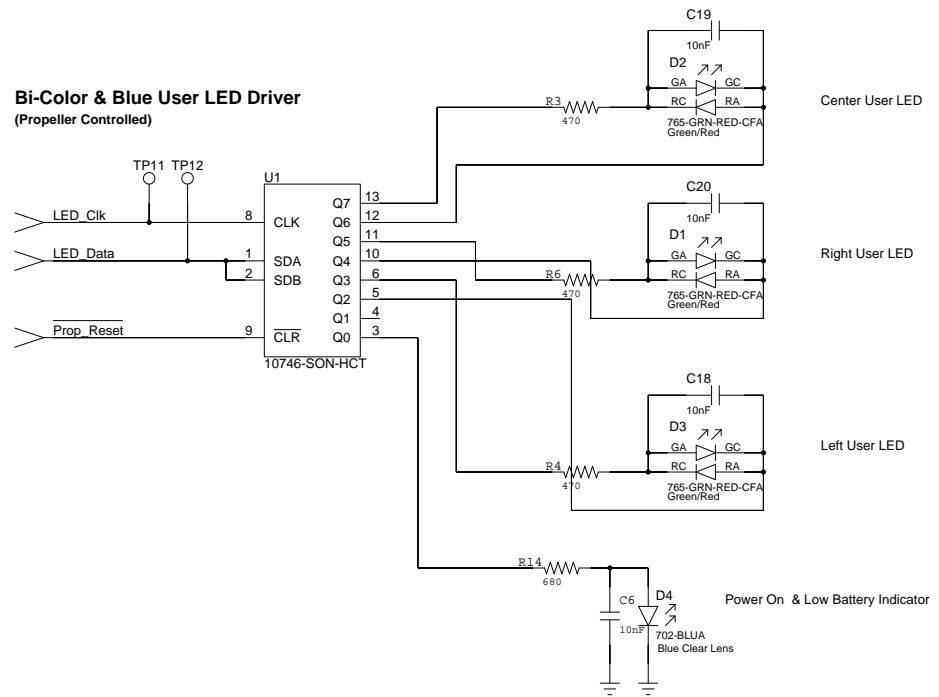
Back PCB



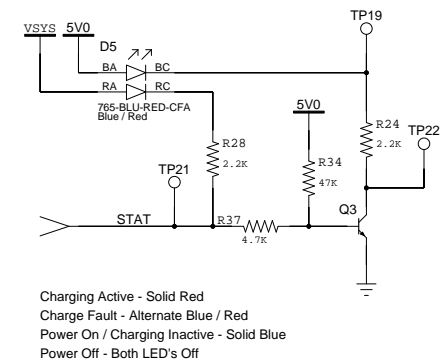
Main Board Ribbon Cable



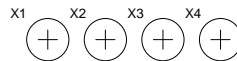
**Bi-Color & Blue User LED Driver
(Propeller Controlled)**



**Power & Charge Status LED's
(Hardware Controlled)**

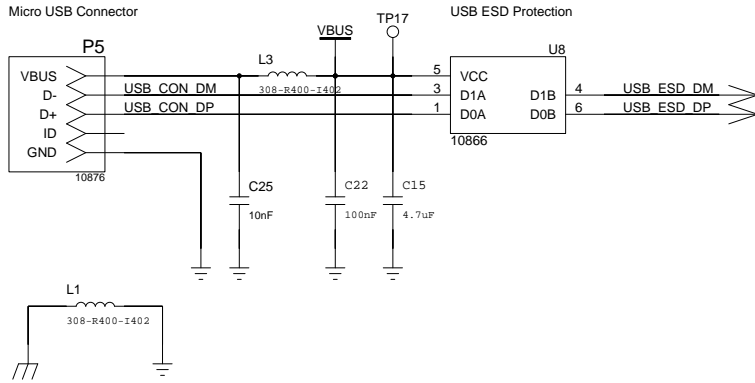


Charging Active - Solid Red
 Charge Fault - Alternate Blue / Red
 Power On / Charging Inactive - Solid Blue
 Power Off - Both LED's Off

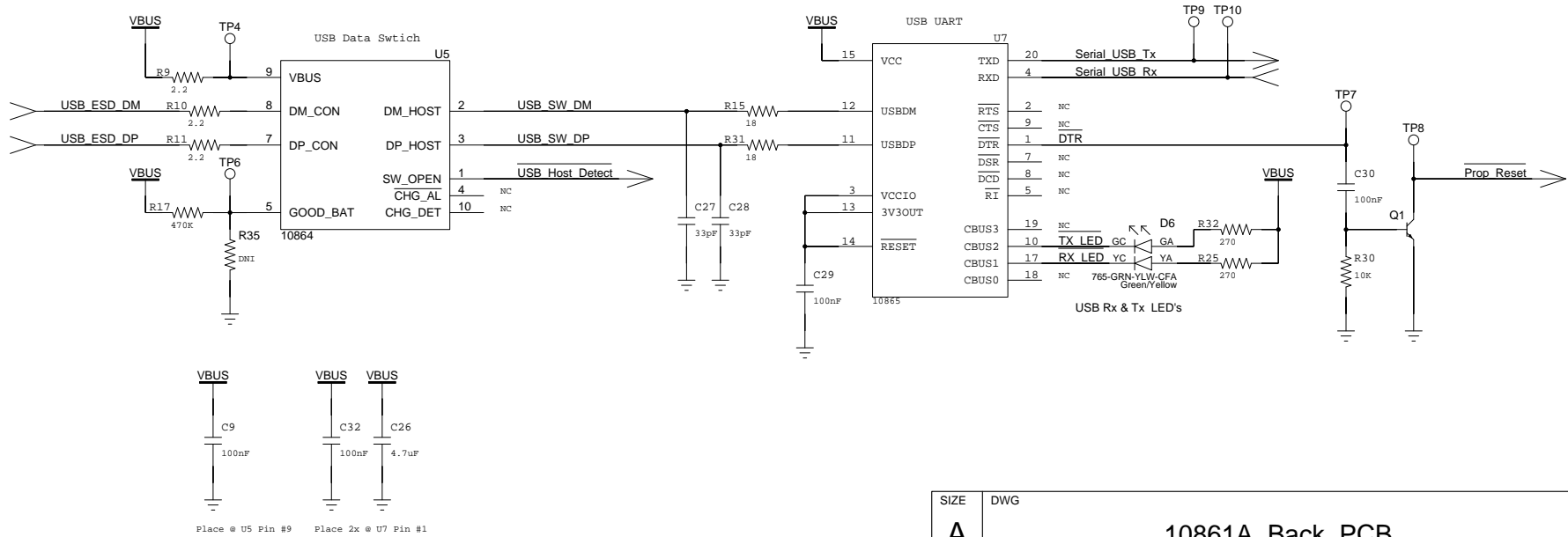


SIZE	DWG		
A	10861A_Back_PCB		
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	4	Scribbler3

USB Protection, Data Switch & Serial Converter



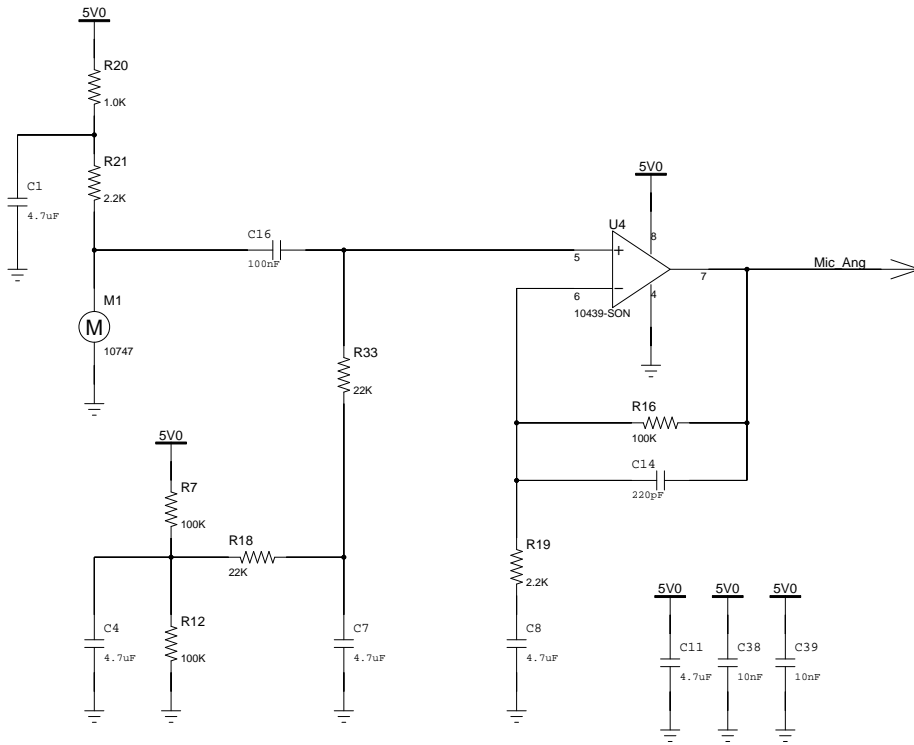
AC Short USB Shield to Digital Gnd



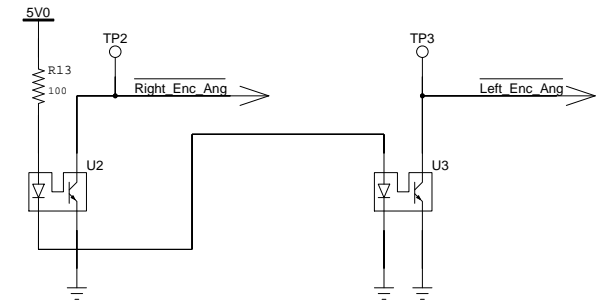
Place @ U5 Pin #9 Place 2x @ U7 Pin #1

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

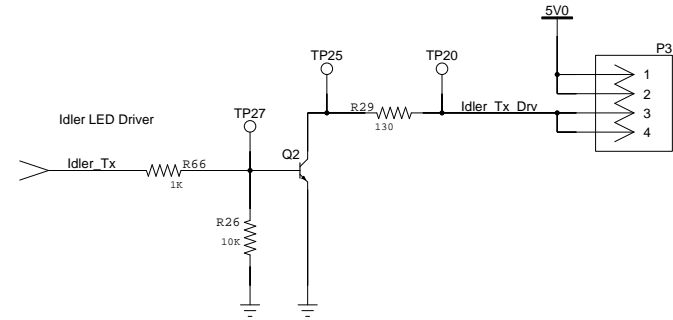
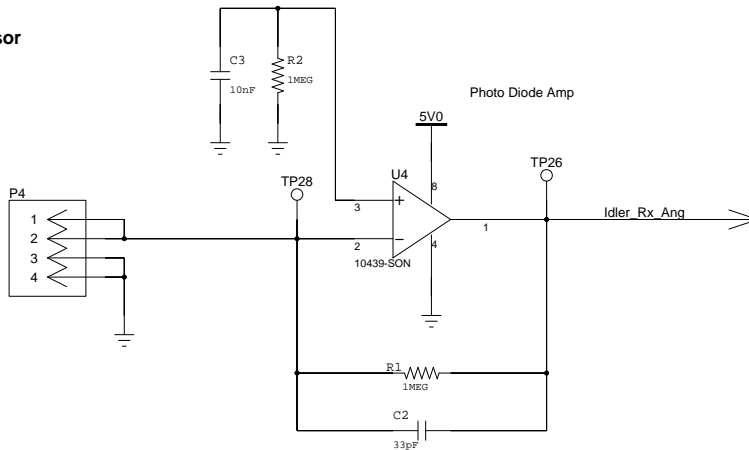
Microphone Pre-Amp



Motor Break Beam Encoders

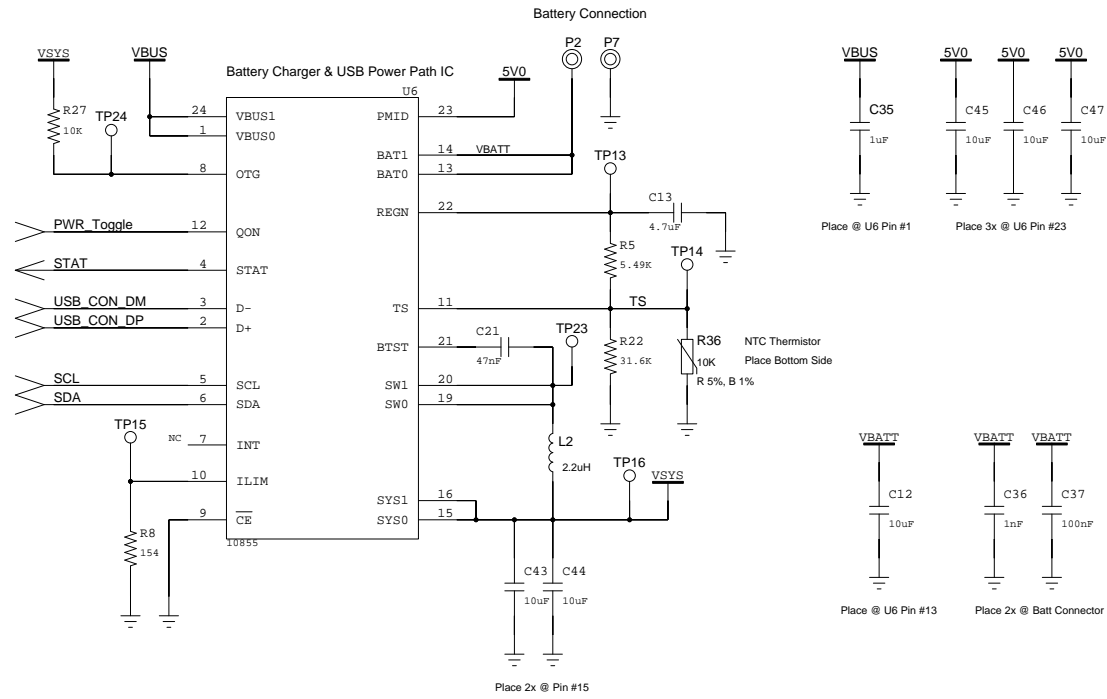


Idler Wheel Break Beam Sensor

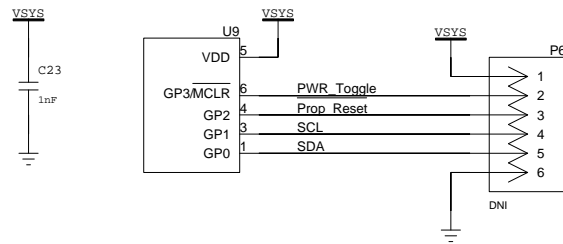


SIZE	DWG	10861A_Back_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	3	4	Scribblers

Battery Charger & Power Path

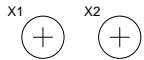
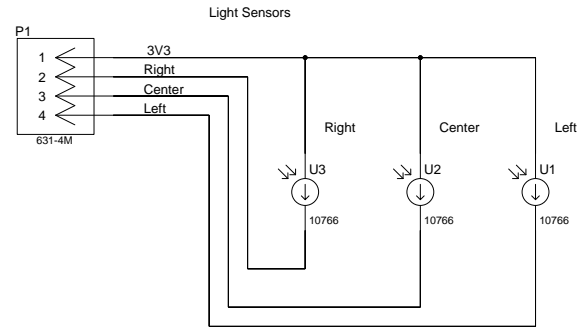


Soft Power Switch Controller



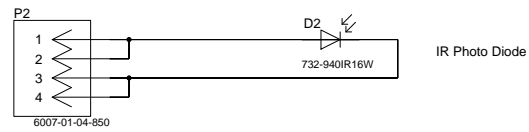
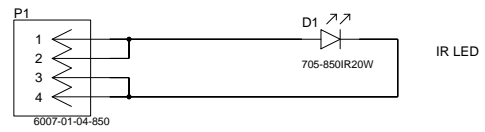
SIZE	DWG	10861A_Back_PCB	
A			
DRAWN BY B. WIRZ	SHEET OF 4 4	PROJECT Scribbler3	

Top Light Sensor PCB



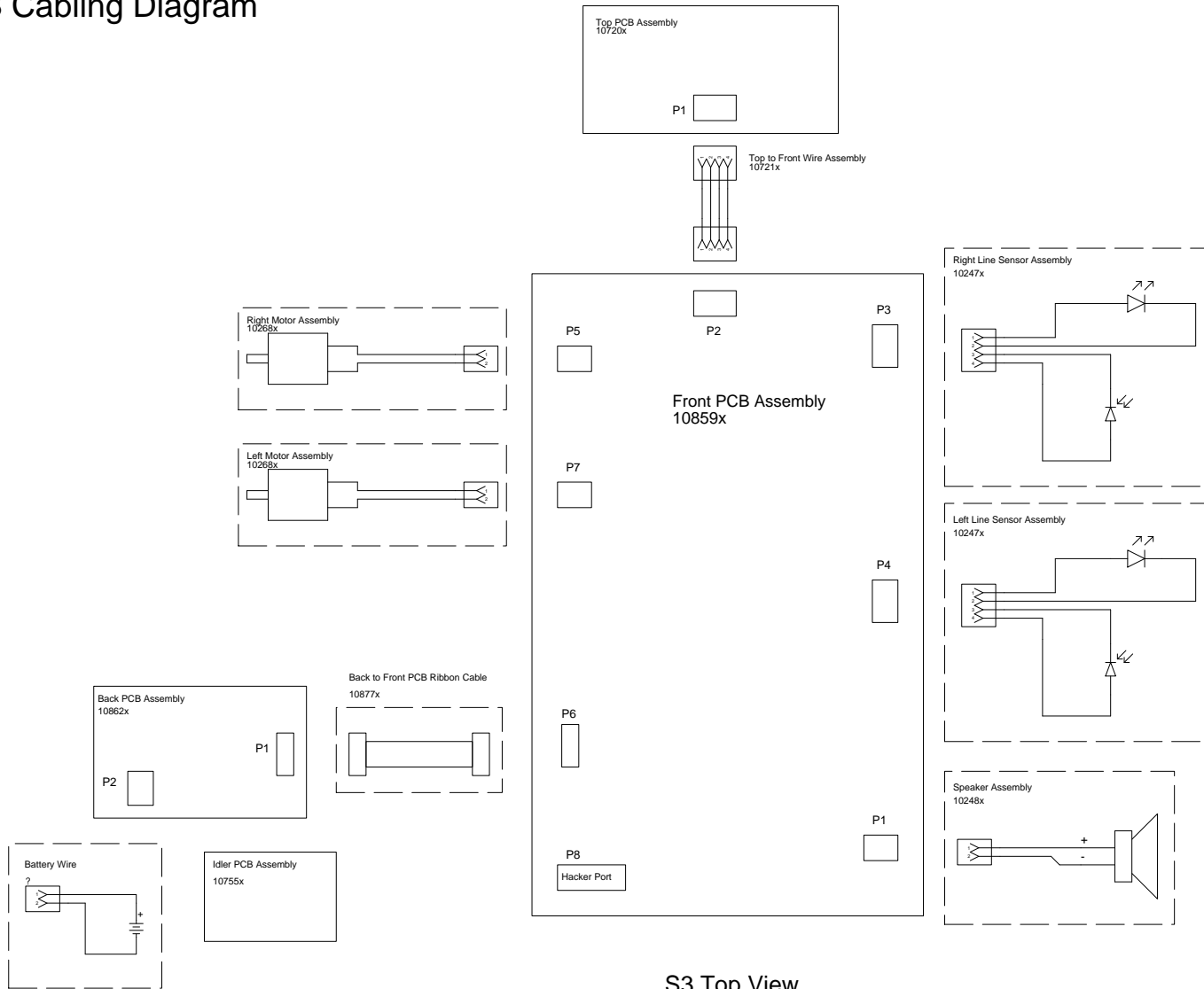
SIZE	DWG	10719C_Top_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Idler Wheel Stall Detector

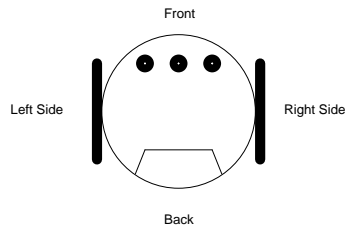


SIZE	DWG	10754B_Idler_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

S3 Cabling Diagram

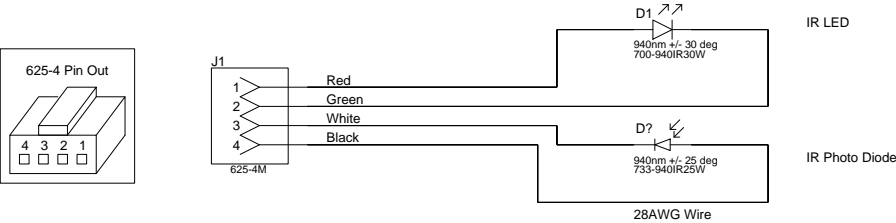


S3 Top View

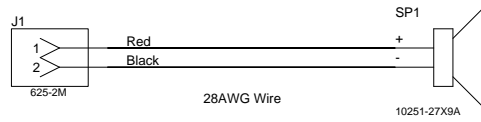
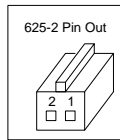


SIZE	DWG	S3_Cabling_Diagram	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Line Sensor Wire Diagram

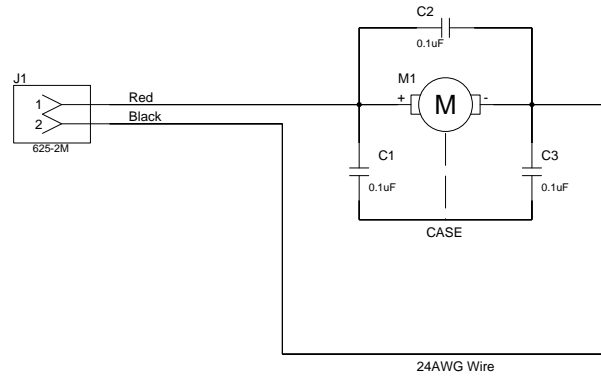
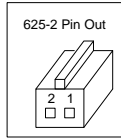


Speaker Wire Diagram



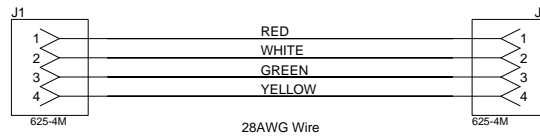
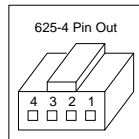
SIZE	DWG	10248C_Speaker_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

Motor Wire Diagram



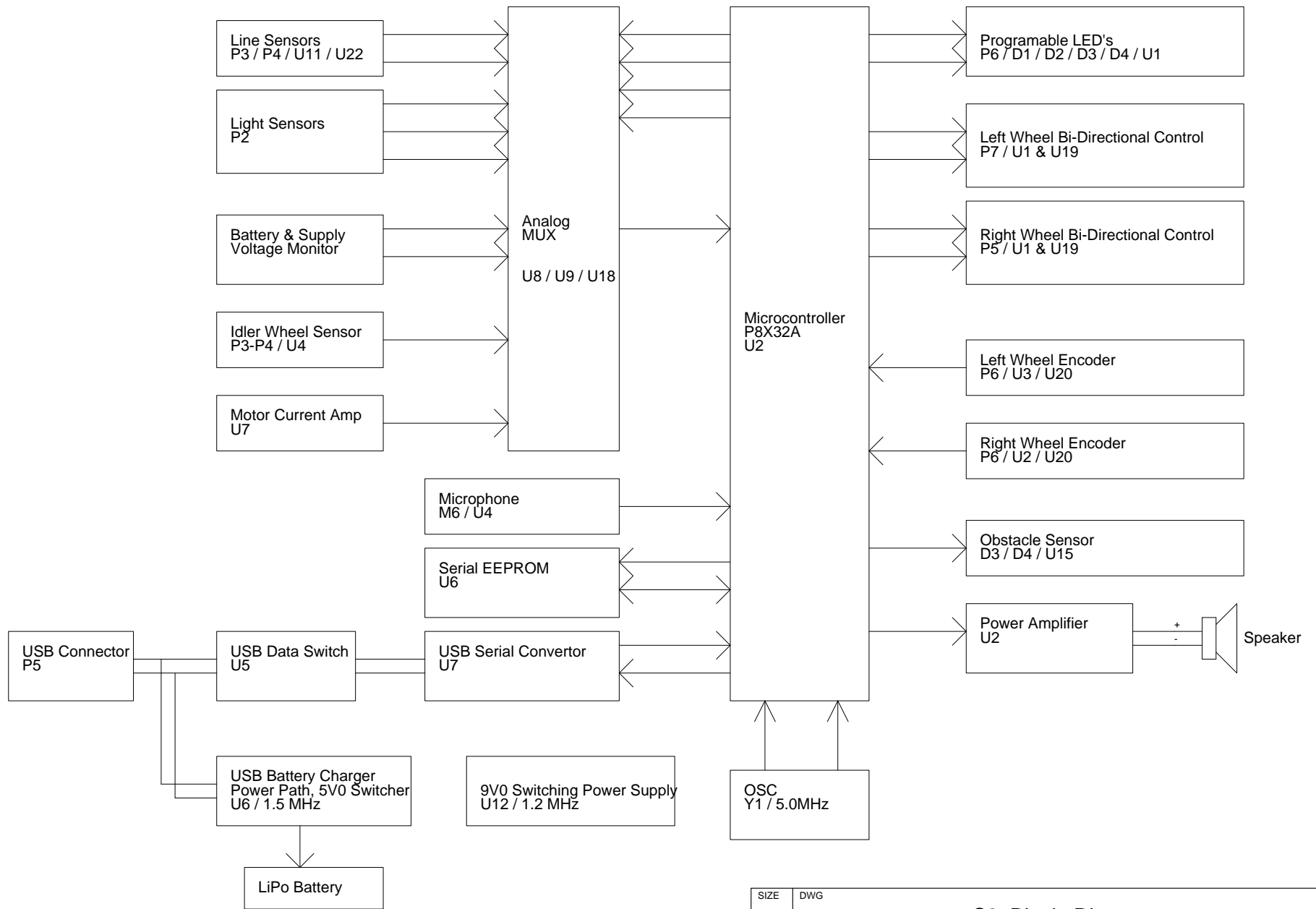
SIZE	DWG	10268E_Motor_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

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



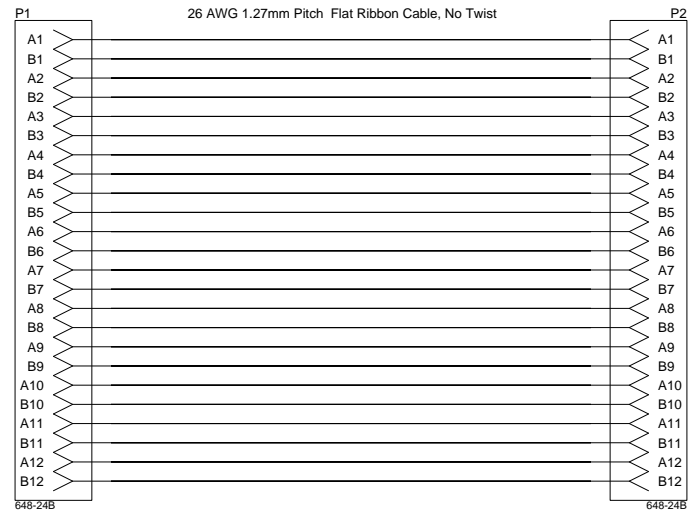
SIZE	DWG	10721A_Top_PCB_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	Scribbler3

S3 System Block Diagram



SIZE	DWG	S3_Block_Diagram		
A				
DRAWN BY	SHEET	OF	PROJECT	
B. WIRZ	1	1	Scribbler3	

Front PCB to Back PCB Ribbon Cable Assembly



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