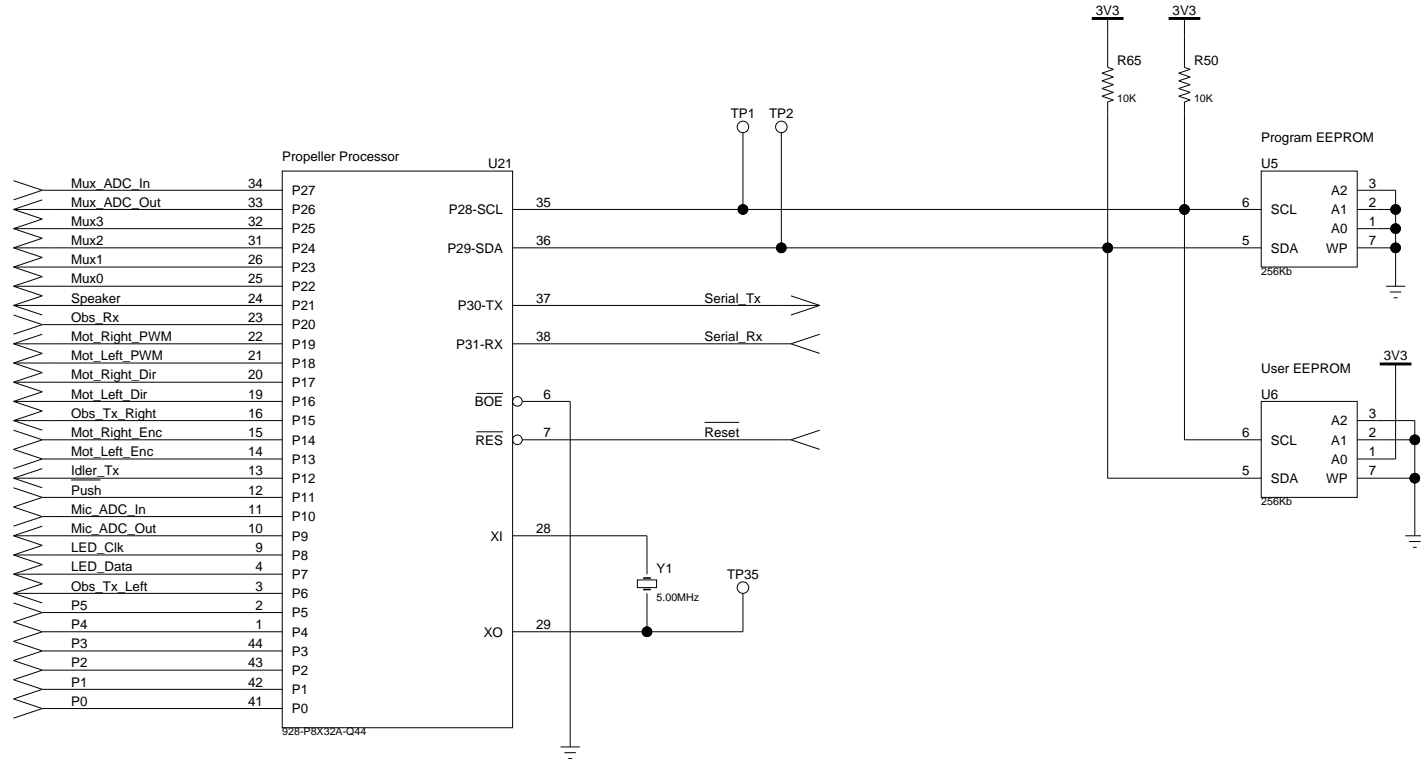


S2 Robot Electrical Schematics

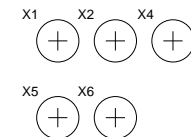
Public Release: 09DEC2010
 Subversion Rev: 2271

PDF Viewing Notes:

The Net Names & Components are Hyper Linked.
 Left Click on a Component to view additional information.
 Left Click on a Net Name to follow it through the design.



Mounting Holes

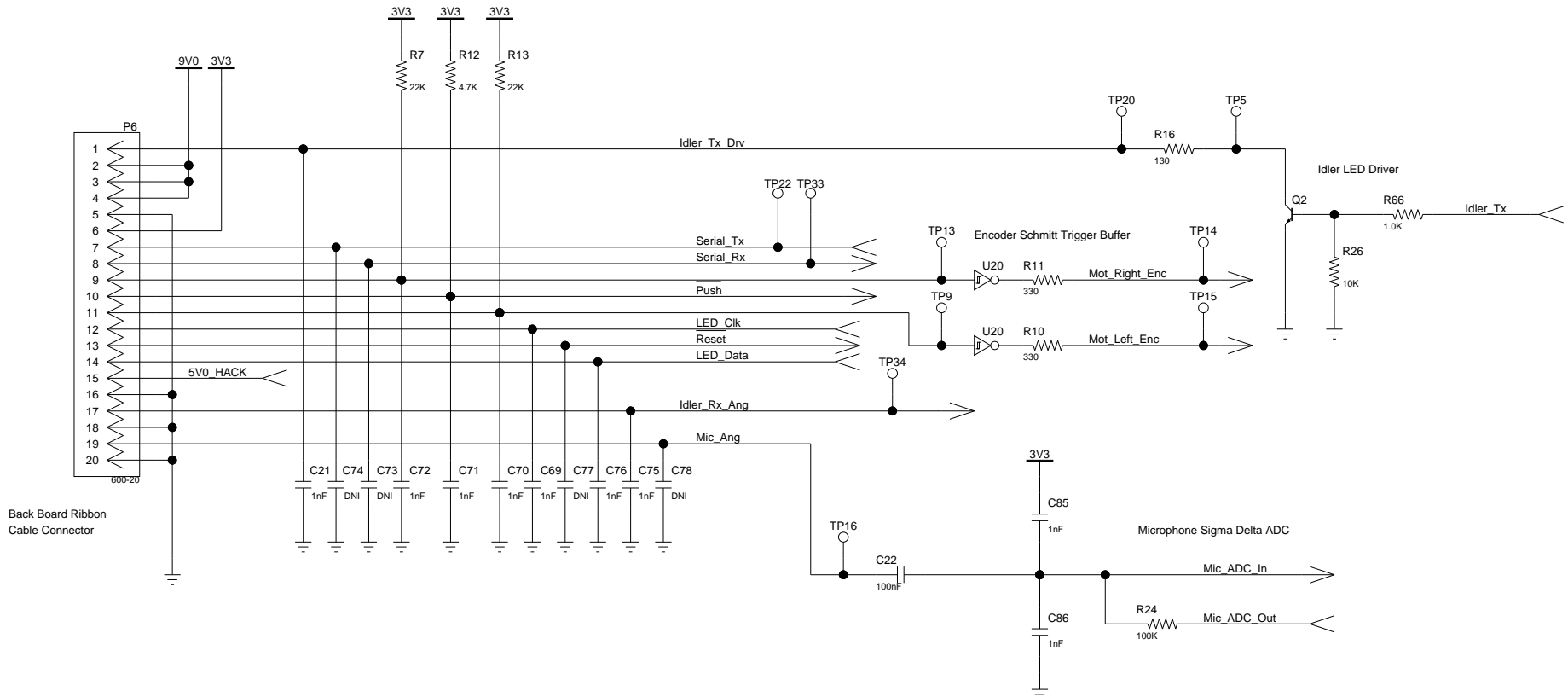


Designer: Ben Wirz
 Element Products, Inc.
<http://www.elementinc.com/>

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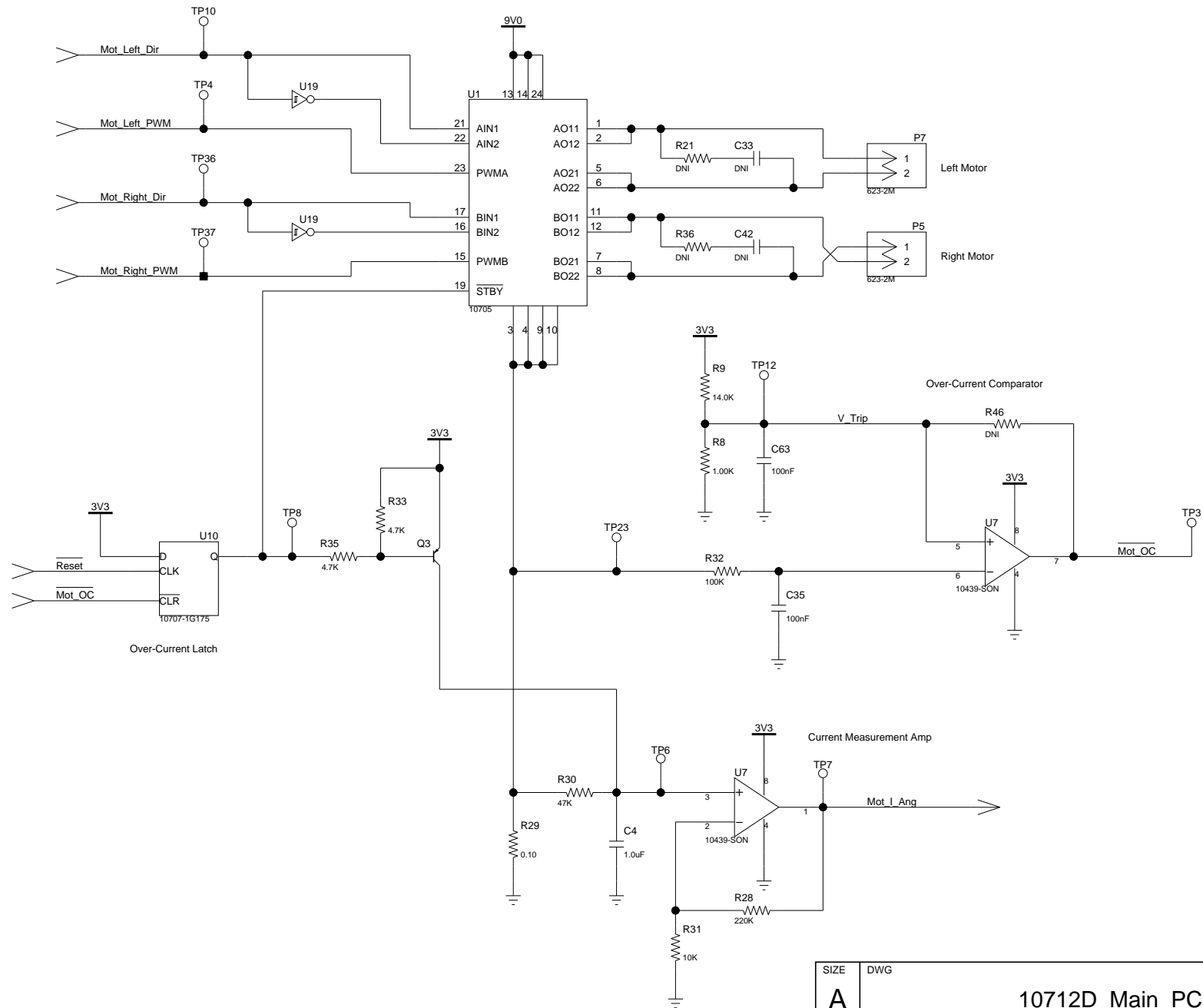
SIZE	DWG	PROJECT	
A		10712D_Main_PCB	
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	8	SCRIBBLER2

Back Board Interface



SIZE	DWG				
A		10712D_Main_PCB			
DRAWN BY	SHEET	OF	PROJECT		
B. WIRZ	2	8	SCRIBBLER2		

Motor Driver

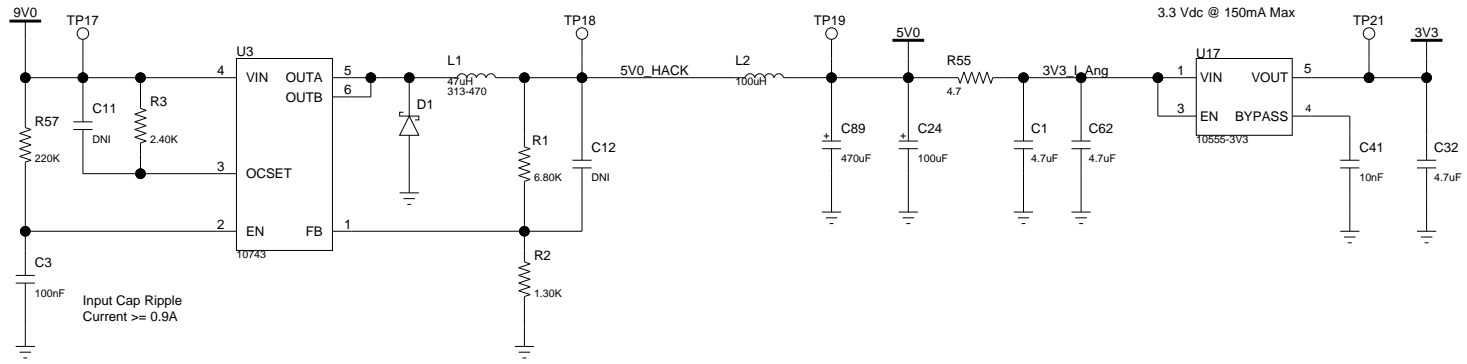


SIZE	DWG	10712D_Main_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	3	8	SCRIBBLER2

Power Supply

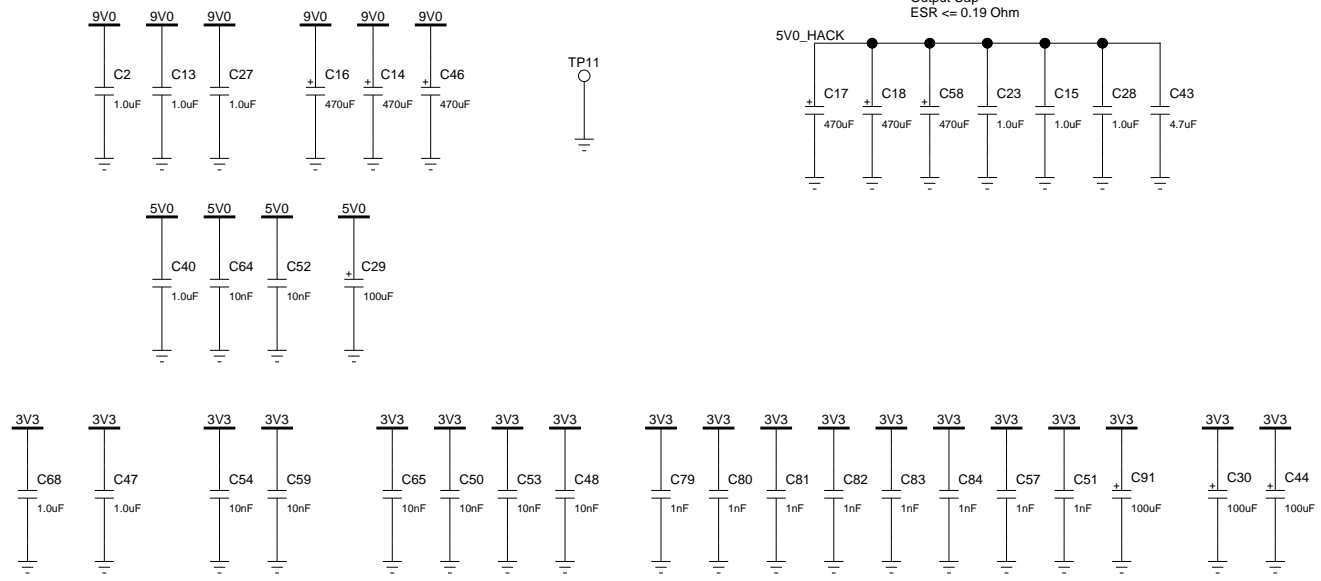
300kHz Switching Regulator
5.0 Vdc @ 1,800mA Max

Linear Regulator
3.3 Vdc @ 150mA Max

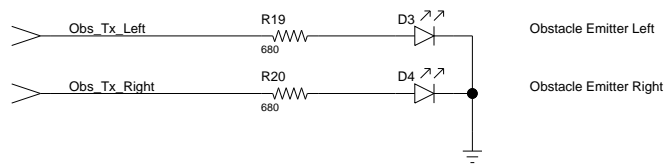
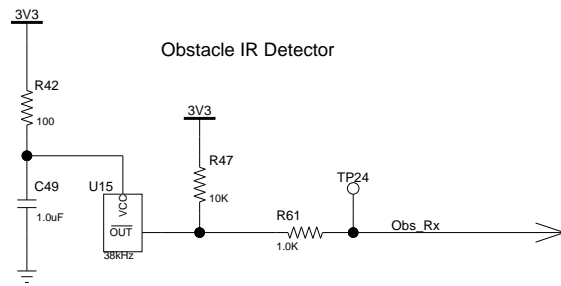
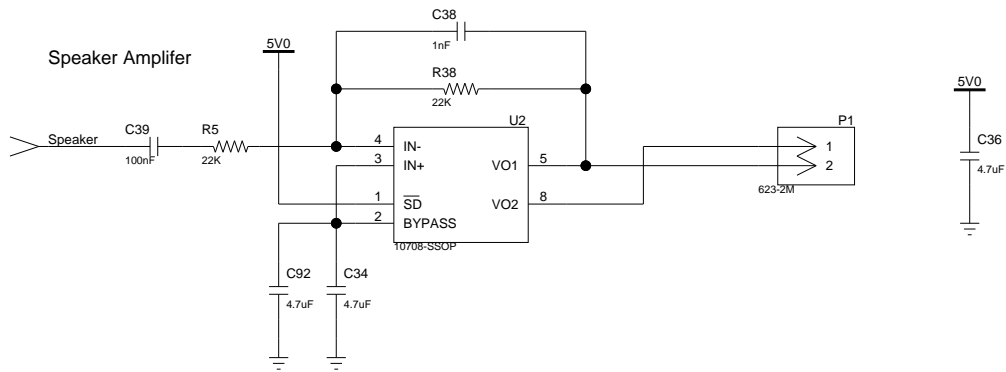


Input Cap Ripple
Current >= 0.9A

Output Cap
ESR <= 0.19 Ohm



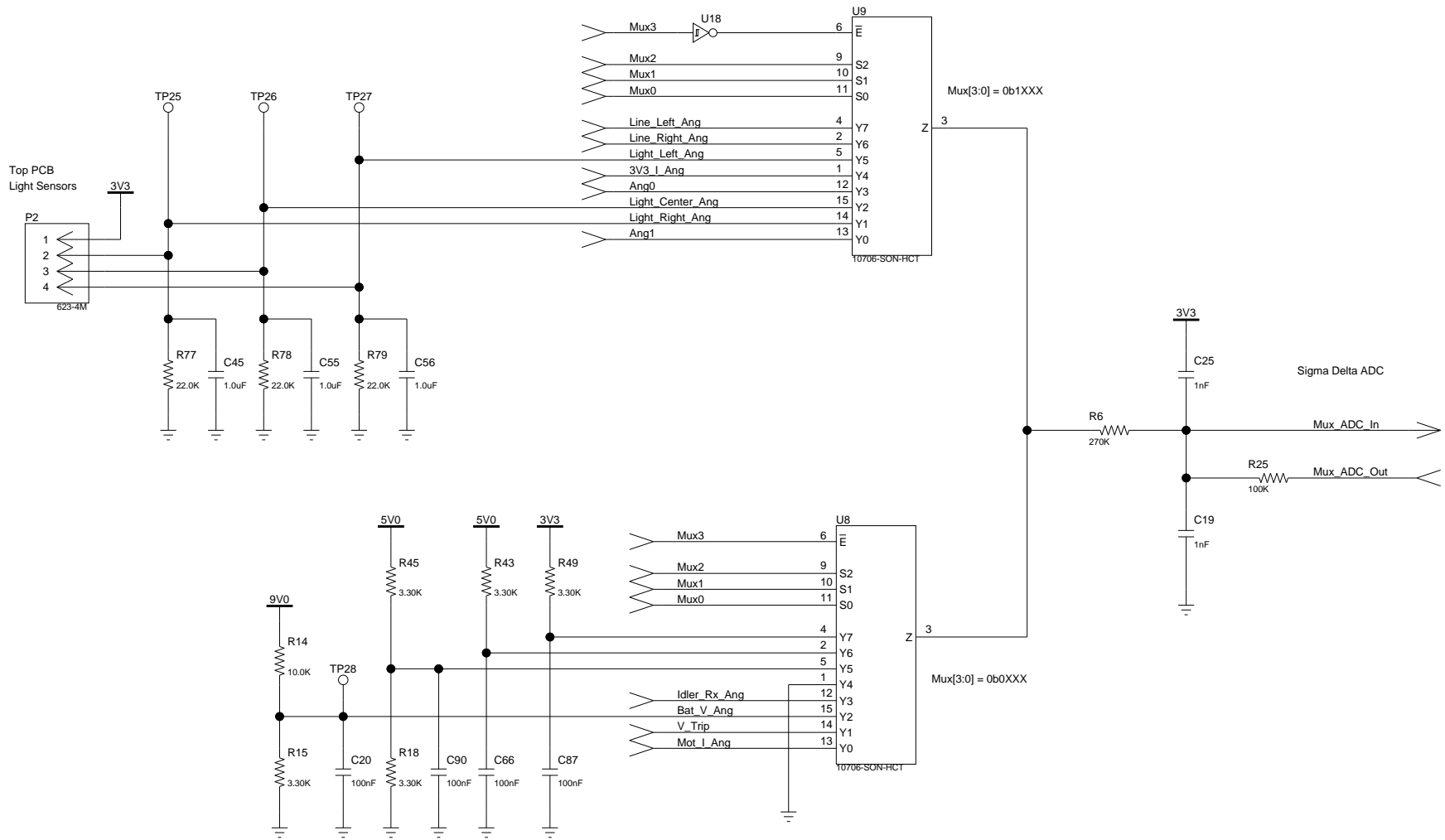
SIZE	DWG	10712D_Main_PCB	
A			
DRAWN BY B. WIRZ		SHEET OF 4 8	PROJECT SCRIBBLER2



SIZE	DWG	10712D_Main_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	5	8	SCRIBBLER2

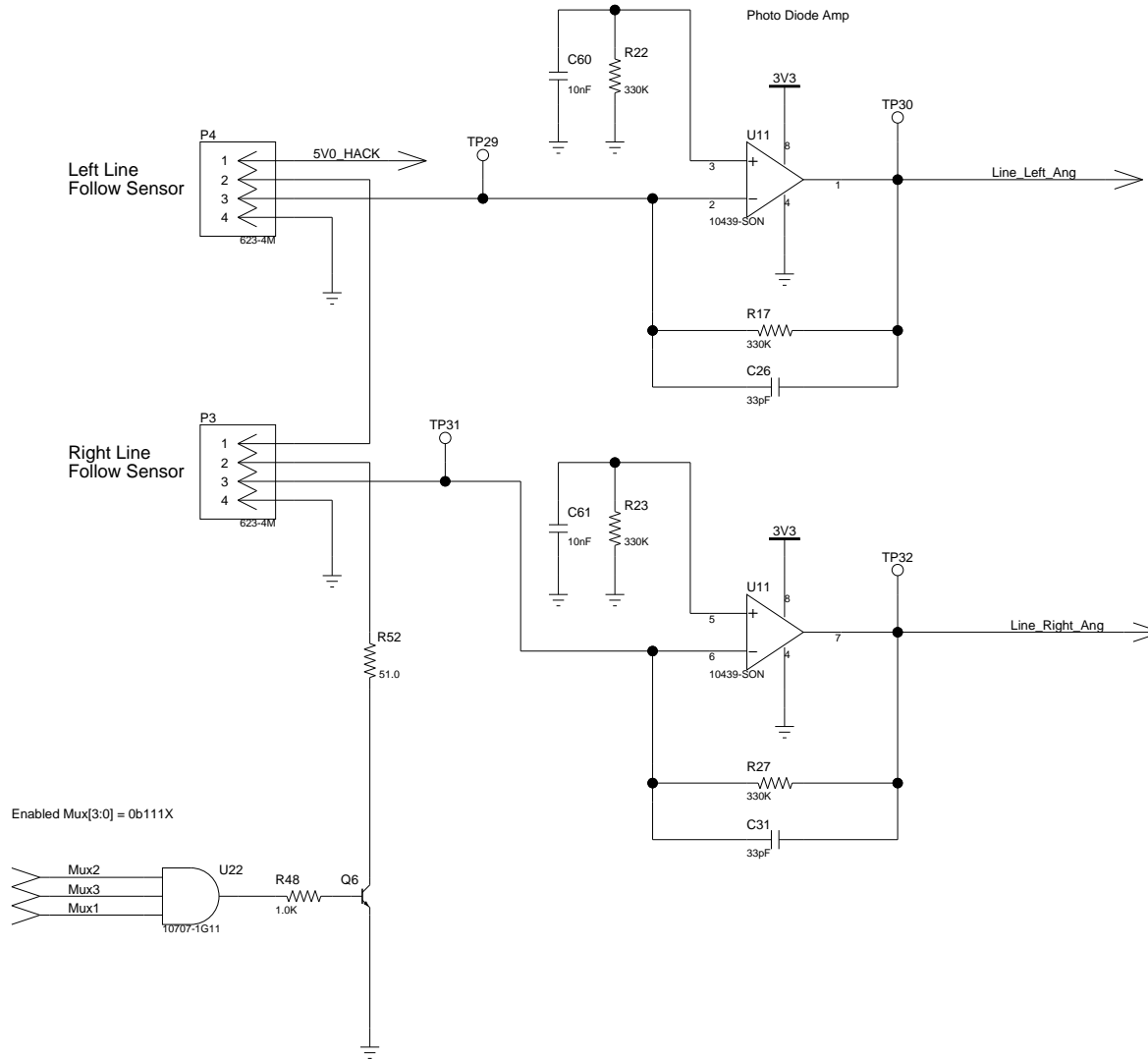
16 Channel Sigma Delta ADC

16:1 Analog Mux



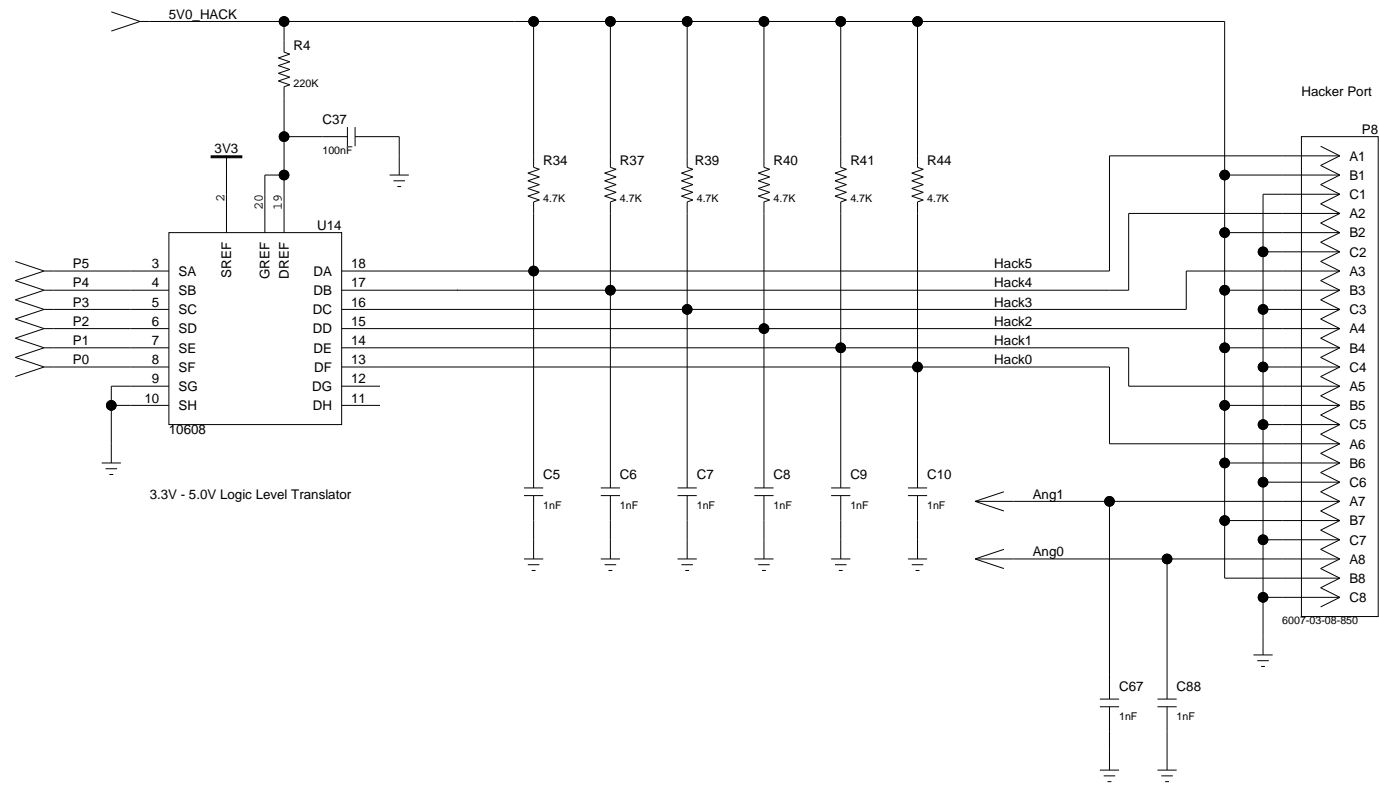
SIZE	DWG	10712D_Main_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	6	8	SCRIBBLER2

Line Follow Sensor Interface



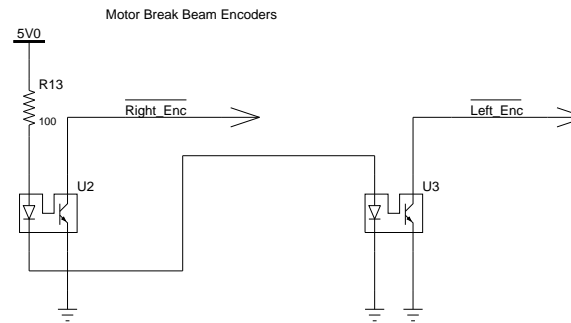
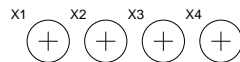
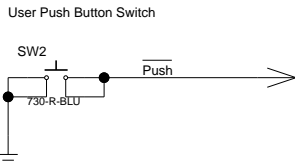
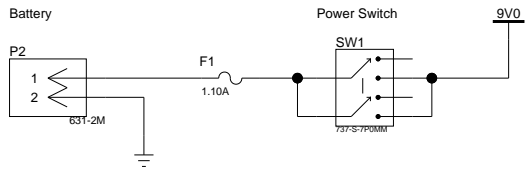
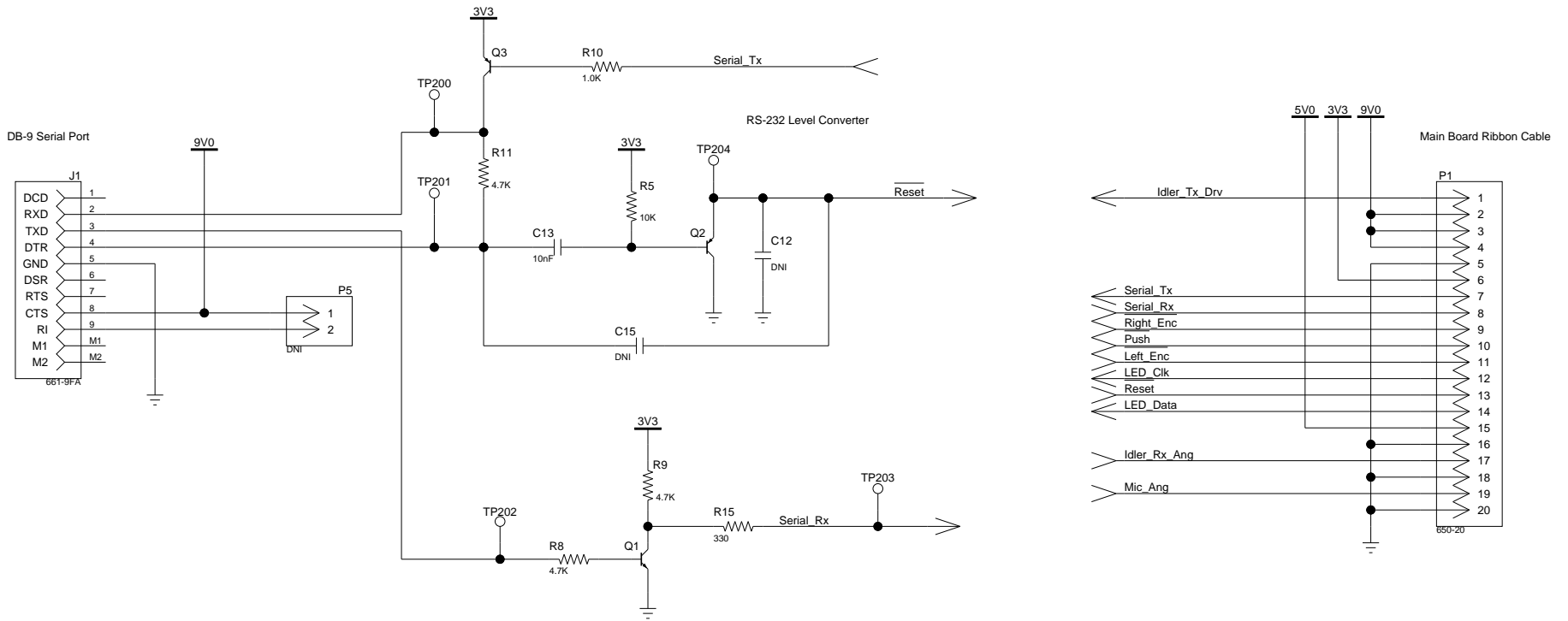
SIZE	DWG	10712D_Main_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	7	8	SCRIBBLER2

Hacker Port Interface

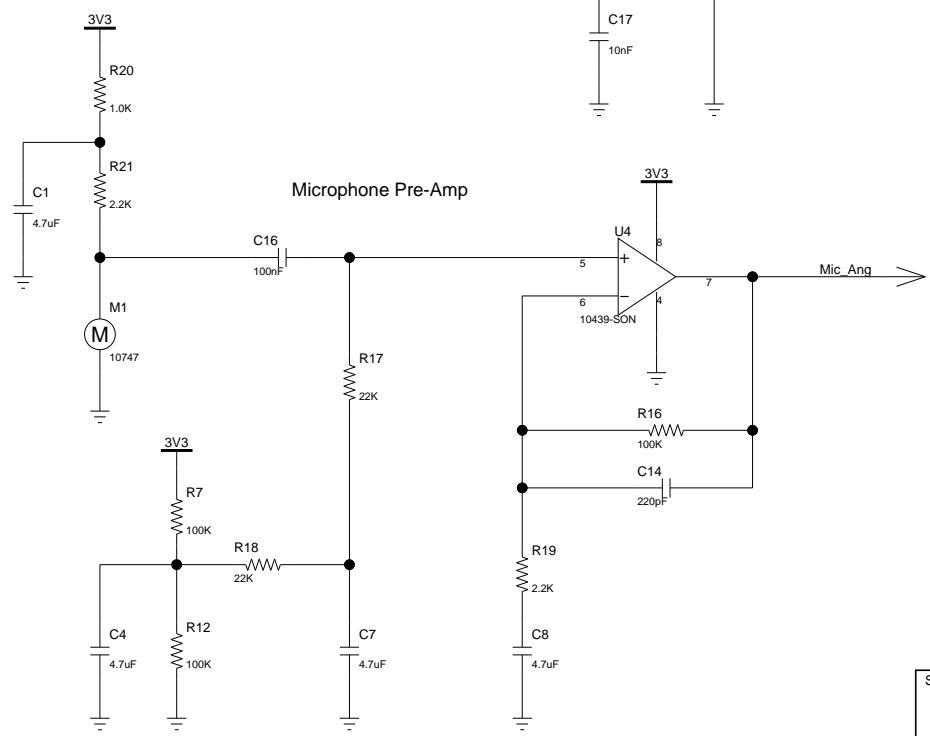
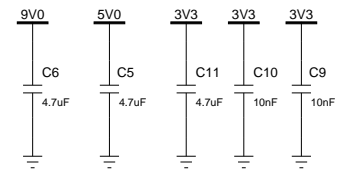
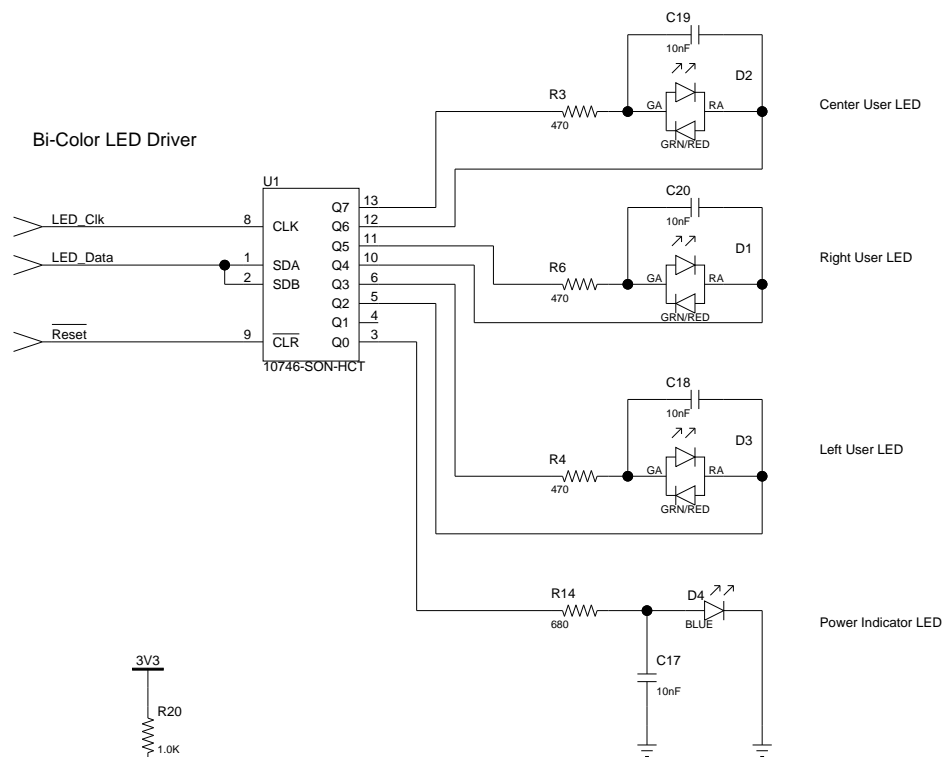


SIZE	DWG			
A		10712D_Main_PCB		
DRAWN BY	SHEET	OF	PROJECT	
B. WIRZ	8	8	SCRIBBLER2	

Back PCB

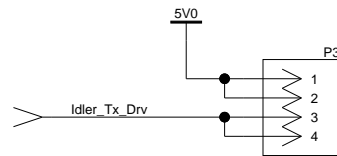
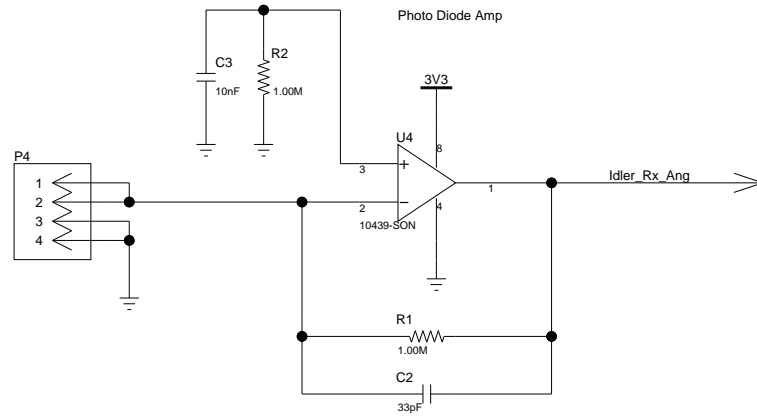


SIZE	DWG	10715E_Back_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	3	SCRIBBLER2



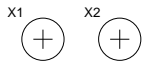
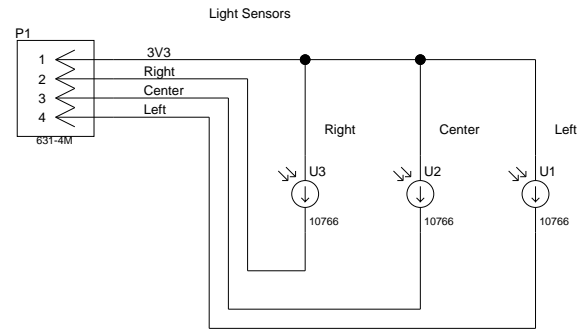
SIZE	DWG	10715E_Back_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	2	3	SCRIBBLER2

Idler Wheel Break Beam Sensor



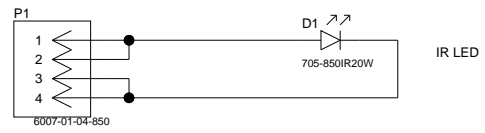
SIZE	DWG	10715E_Back_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	3	3	SCRIBBLER2

Top Light Sensor PCB

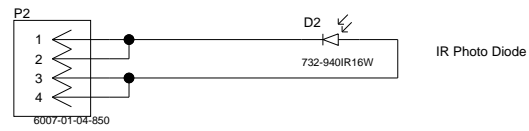


SIZE	DWG	10718C_Top_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	SCRIBBLER2

Idler Wheel Stall Detector



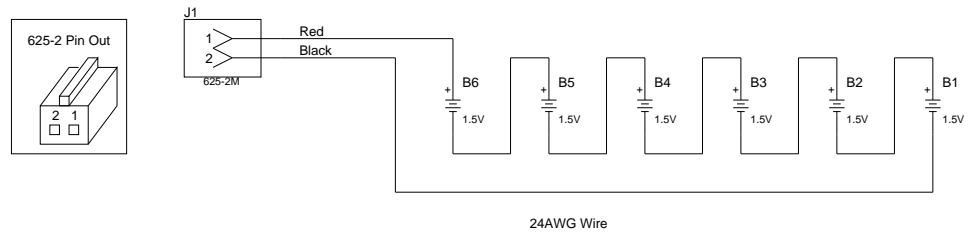
IR LED



IR Photo Diode

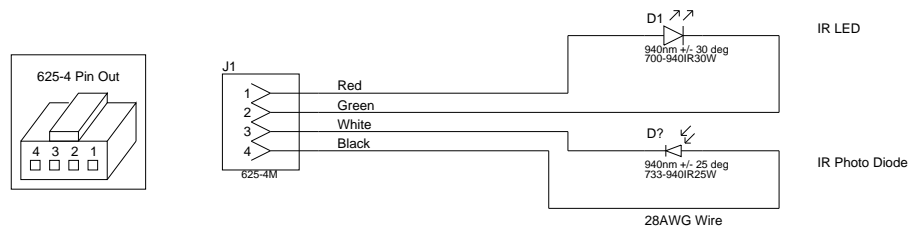
SIZE	DWG	10753B_Idler_PCB	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	SCRIBBLER2

Battery Box Wire Diagram



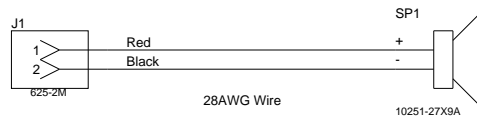
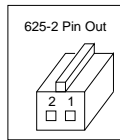
SIZE	DWG	10243D_Battery_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	SCRIBBLER2

Line Sensor Wire Diagram



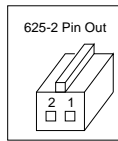
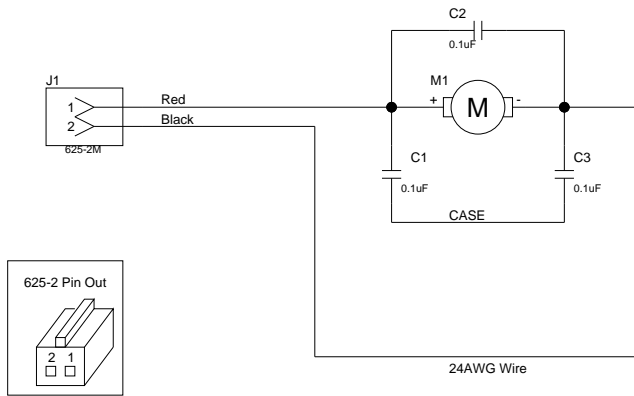
SIZE	DWG			
A		10247F_Line_Sensor_Wire		
DRAWN BY	SHEET	OF	PROJECT	
B. WIRZ	1	1	SCRIBBLER2	

Speaker Wire Diagram



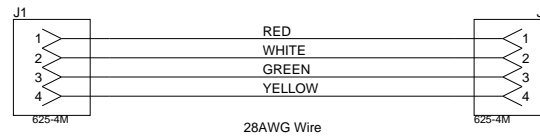
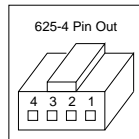
SIZE	DWG	10248C_Speaker_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	SCRIBBLER2

Motor Wire Diagram



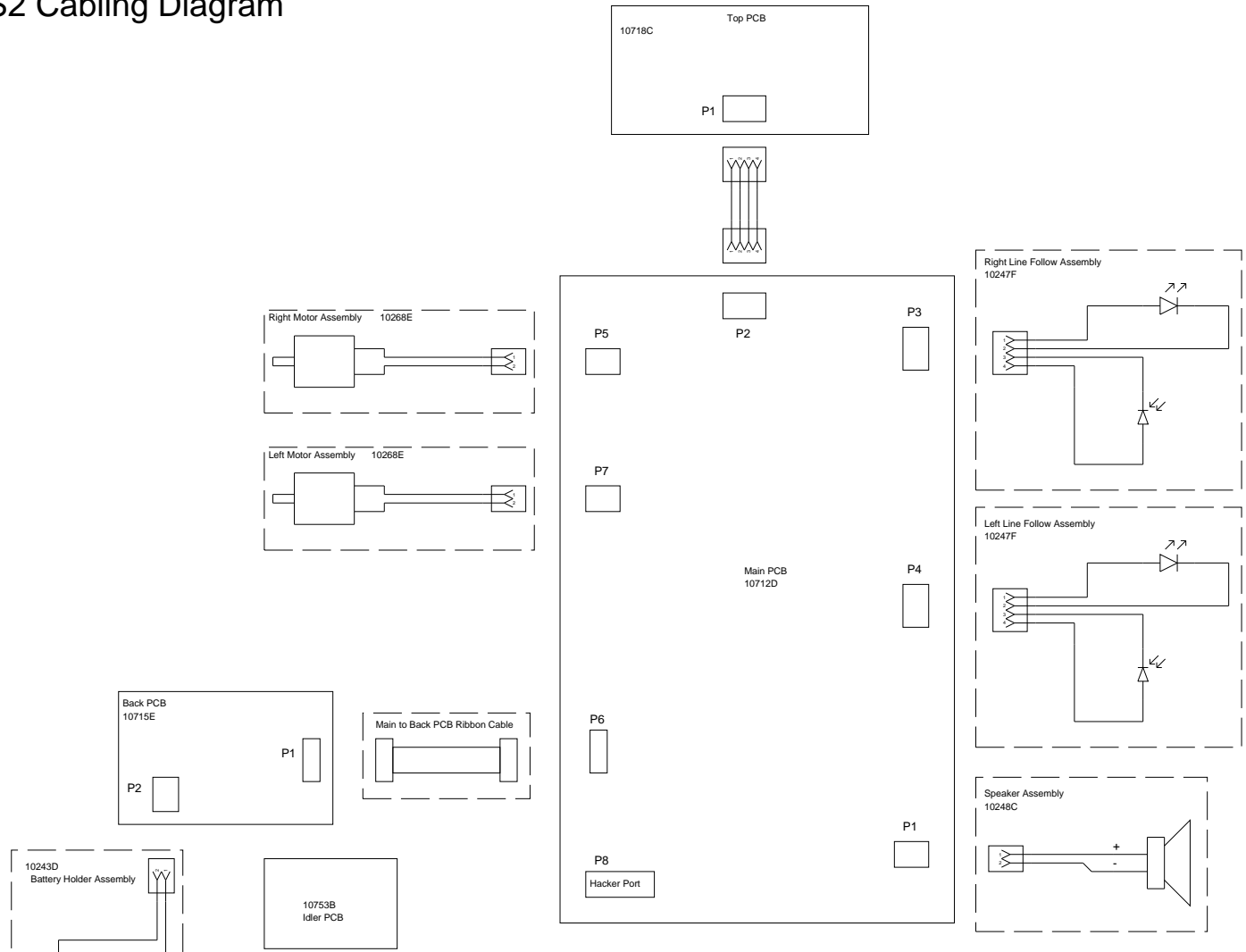
SIZE	DWG	10268E_Motor_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	SCRIBBLER2

Top PCB (10719) to Main PCB (10713) Wire Diagram

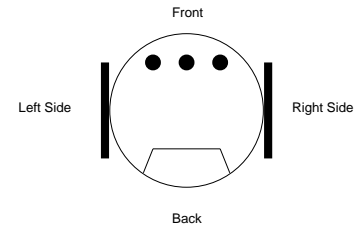


SIZE	DWG	10721A_Top_PCB_Wire	
A			
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	SCRIBBLER2

S2 Cabling Diagram



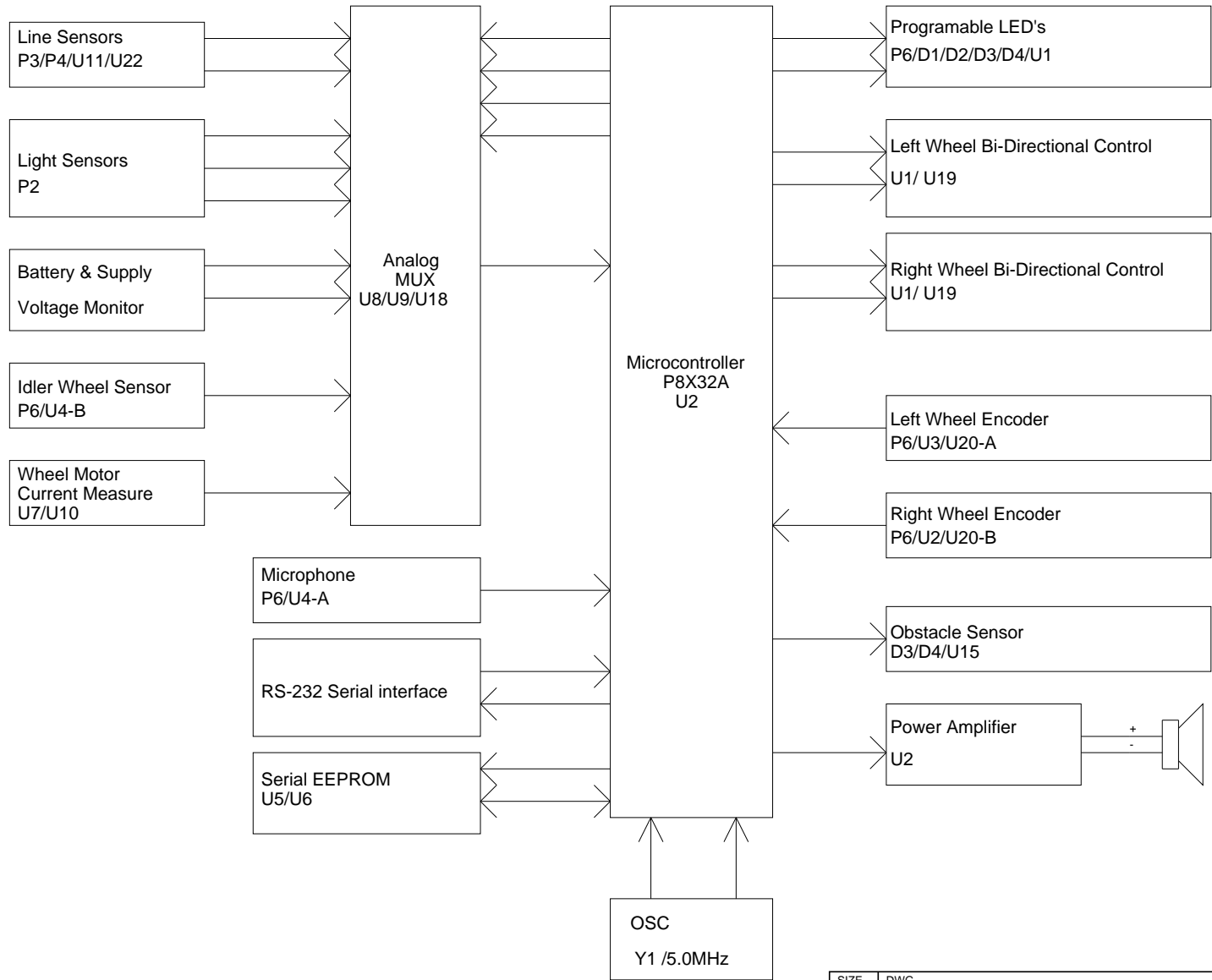
S2 Top View



SIZE	DWG	Cabling_Diagram		PROJECT	SCRIBBLER2
A					
DRAWN BY	SHEET	OF	PROJECT		
B. WIRZ	1	1	SCRIBBLER2		

S2 System Block Diagram

Switching Power Supply
300 kHz



SIZE	DWG		
A	Block_Diagram		
DRAWN BY	SHEET	OF	PROJECT
B. WIRZ	1	1	SCRIBBLER2