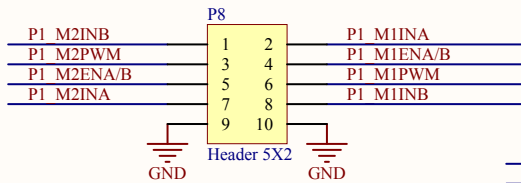
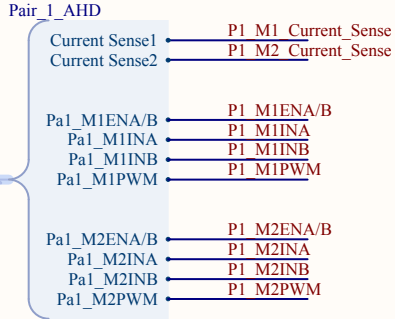


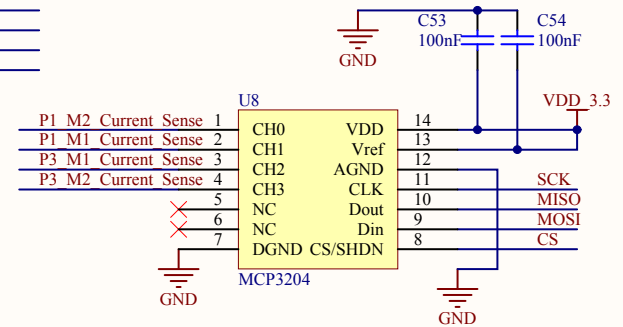
Title			Active Ballast Controller	
Size	Number		Revision	
A			2.1a	
Date:	4/22/2013		Sheet	5 of 5
File:	C:\Users\...\Ballast and Depth Controller.SchDoc		Drawn By:	Adam Vadala-Roth

Control Signal Breakout Headers & Current Sensing

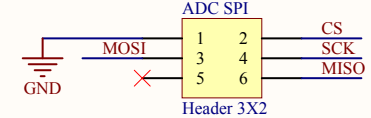
Pair 1



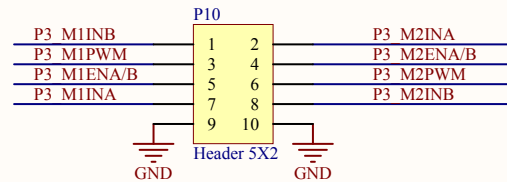
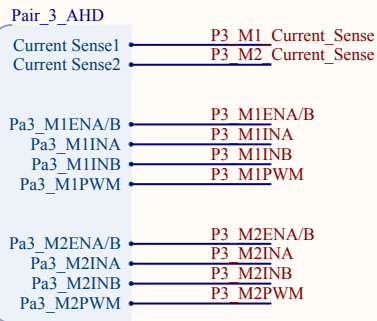
Current Sense Digital Sampling Section



SPI Connection



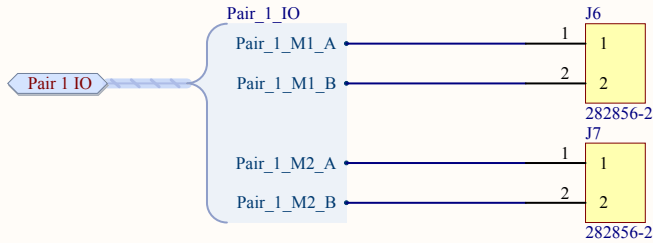
Pair 3



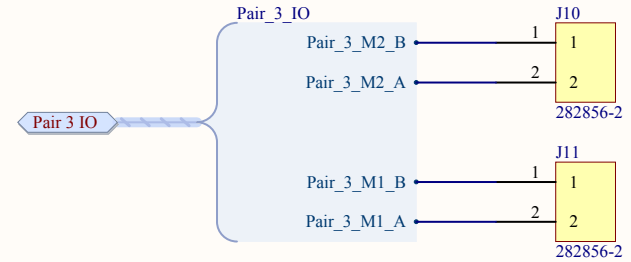
Title			Control Signal Breakout & Current Sesnsing	
Size	Number		Revision	
A			2.1a	
Date:	4/22/2013		Sheet 2of	5
File:	C:\Users\...\Ballast to AHD Breakout.SchDoc		Drawn By:	Adam Vadala-Roth

Ballast Actuator Connection Terminal & Power

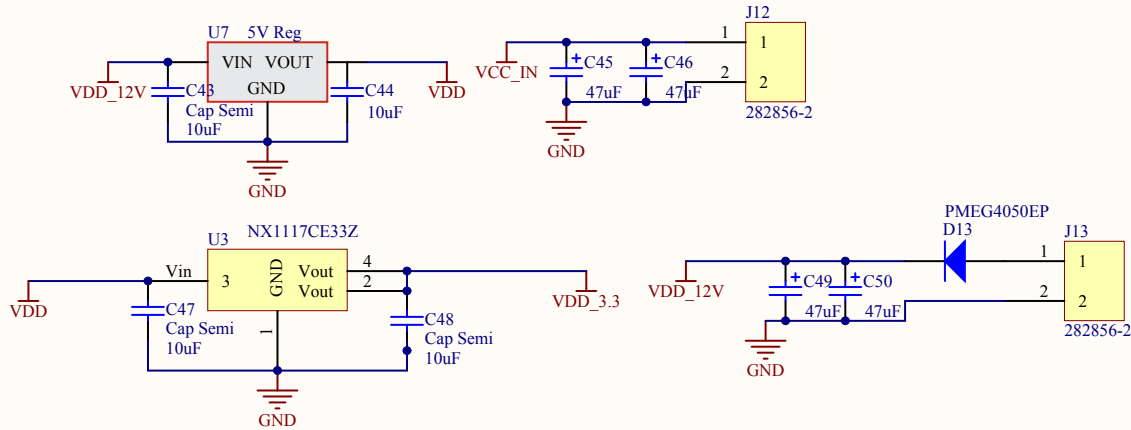
Motor Pair One



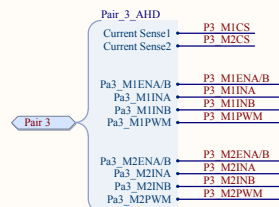
Pair_3_IO



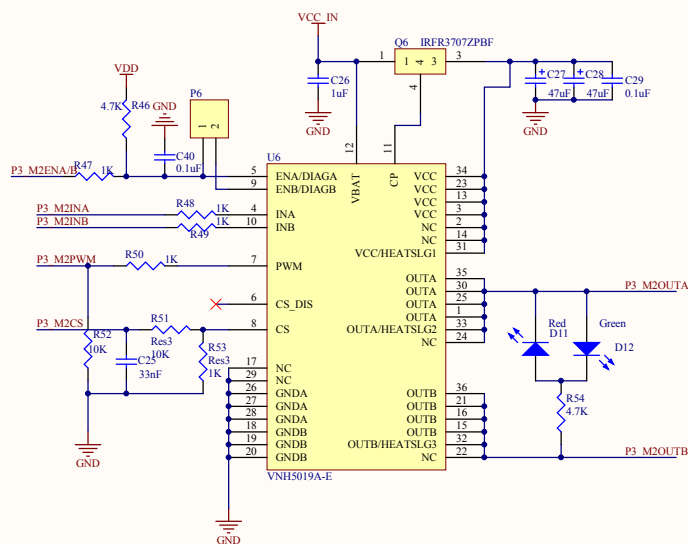
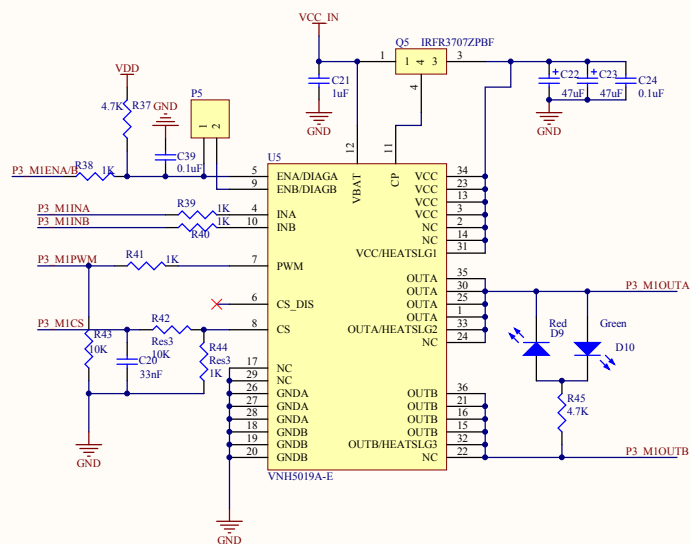
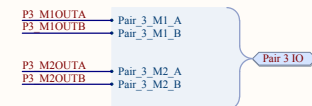
18.5V Rail Connection Terminal



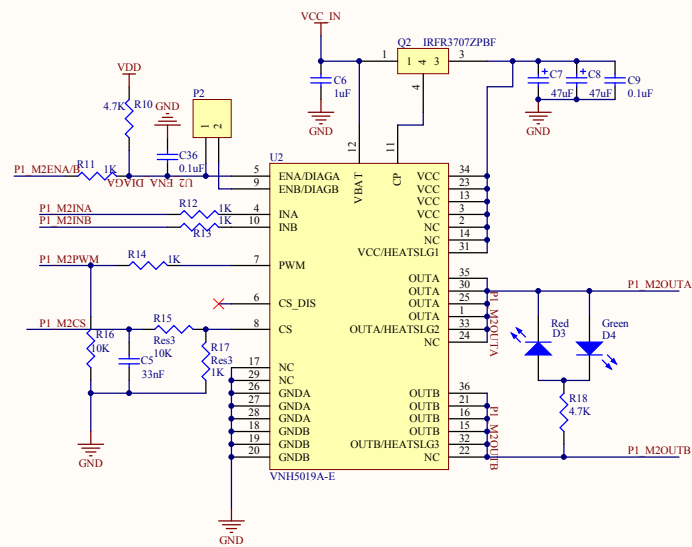
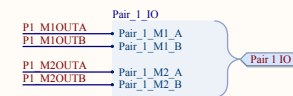
Title			Actuator and Power Connection Terminals	
Size	Number		Revision	
A			2.1a	
Date:	4/22/2013		Sheet 3of 5	
File:	C:\Users\...\Pump and Power IO.SchDoc		Drawn By:	Adam Vadala-Roth



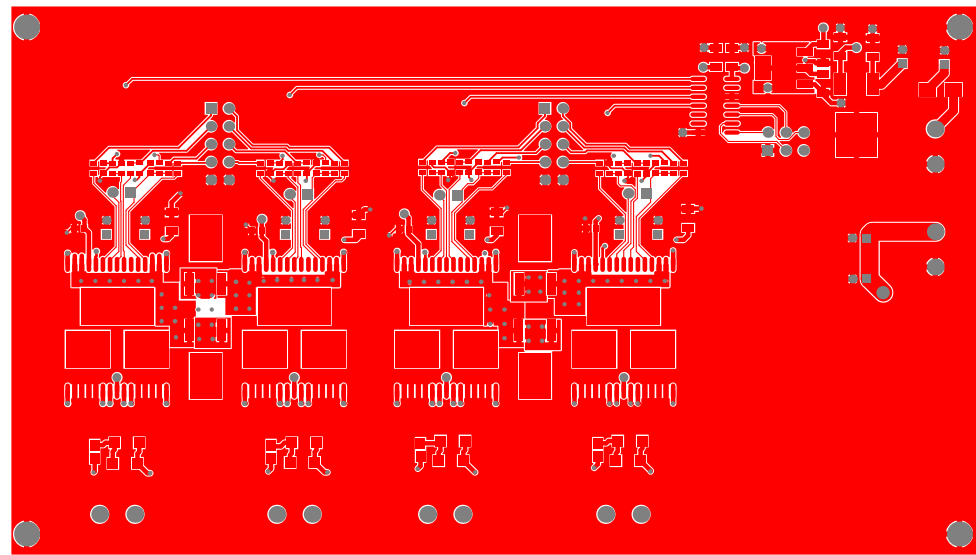
Pair 3_IO

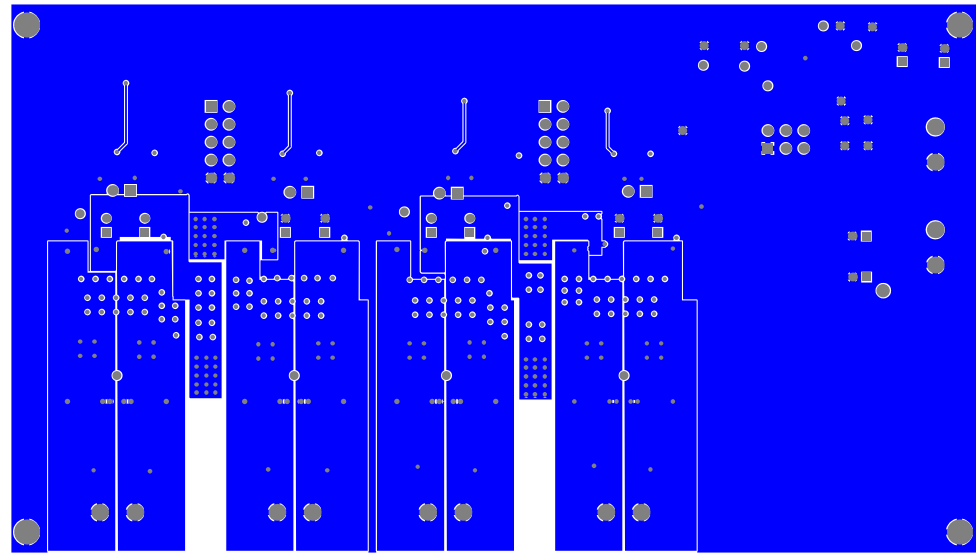


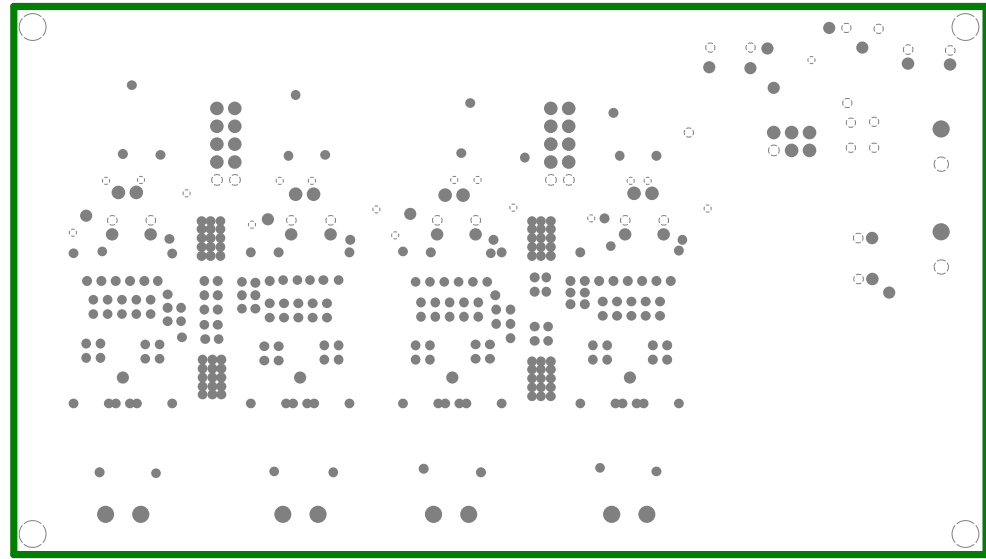
Title		VNHS019 Pair 2	
Size B	Number	Revision 2.1a	
Date:	4/22/2013	Sheet 4 of 5	
File:	C:\Users\...Bridge Pair 3 SchDoc	Drawn By:	Adam Vadala-Roth

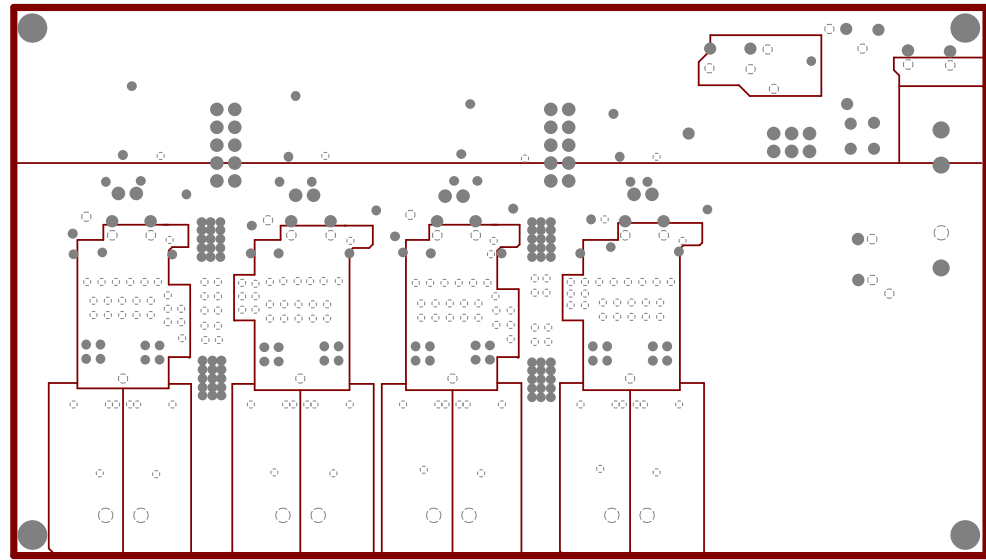


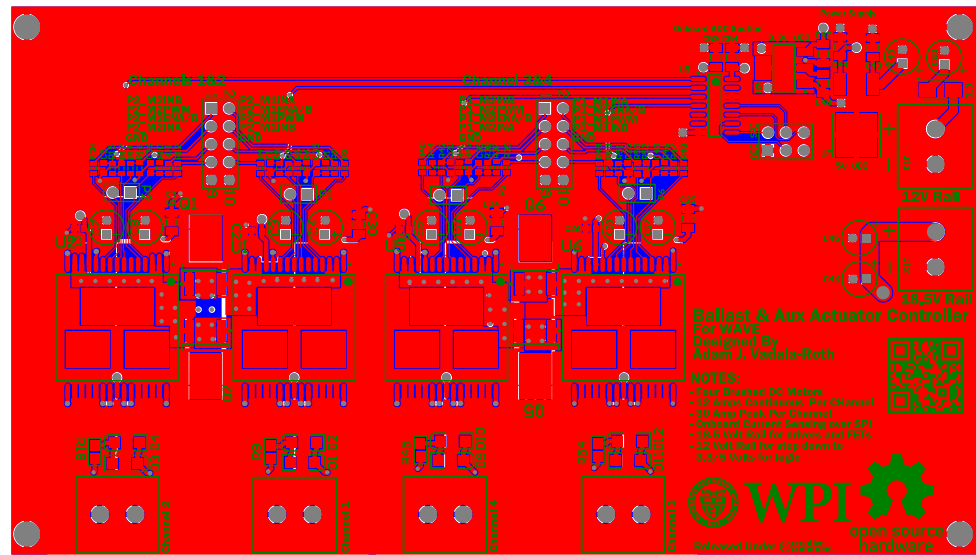
Title			VNH5019 Pair 1		
Size	Number				Revision
B					2.1a
Date:	4/22/2013	Sheet	5 of	5	
File:	C:\Users\...Bridge Pair 1_SchDoc	Drawn By:	Adam Vadala-Roth		











Comment	Description	Designator	Footprint	LibRef	Quantity
Header 3X2	Header, 3-Pin, Dual row	ADC SPI	HDR2X3	Header 3X2	1
Cap Semi	Capacitor (Semiconductor SIM Model)	C1, C2, C5, C6, C20, C21, C25, C26, C35, C36, C39, C40	1608[0603]	Cap Semi	12
Cap Pol2	Polarized Capacitor (Axial)	C3, C4, C7, C8, C22, C23, C27, C28, C45, C46, C49, C50	CAPPR2-5x6.8	Cap Pol2	12
Cap Semi	Capacitor (Semiconductor SIM Model)	C9, C24, C29, C30, C43, C44, C47, C48, C53, C54	C1206	Cap Semi	10
LED2	Typical RED, GREEN, YELLOW, AMBER GaAs LED	D1, D2, D3, D4, D9, D10, D11, D12	3.2X1.6X1.1	LED2	8
PMEG4050EP	Default Diode	D13	PMEG4050EP	Diode	1
282856-2	Two pole screw terminal	J6, J7, J10, J11, J12, J13	282856-2	282856-2	6
Header 2	Header, 2-Pin	P1, P2, P5, P6	HDR1X2	Header 2	4
Header 5X2	Header, 5-Pin, Dual row	P8, P10	HDR2X5	Header 5X2	2
IRFR3707ZPBF	Power FET	Q1, Q2, Q5, Q6	IRFR3707ZPBF	IRFR3707ZPBF	4
Res3	Resistor	R1, R2, R3, R4, R5, R6, R7, R8, R10, R11, R12, R13, R14, R15, R16, R17, R37, R38, R39, R40, R41, R42, R43, R44, R46, R47, R48, R49, R50, R51, R52, R53	RESC1608L	Res3	32
Res3	Resistor	R9, R18, R45, R54	0805 SMD Resistor	Res3	4
VNH5019A-E	VNH5019A-E H-Bridge	U1, U2, U5, U6	VNH5019A-E	VNH5019A-E	4
NX1117CE33Z	3.3v Linear Regulator	U3	NX1117CE33Z	NX1117CE33Z	1
5V Reg	Voltage regulator	U7	DPAK-3	VOLT REG	1
MCP3204	MCP3204 ADC	U8	MCP3204	MCP3204	1