

A

B

C

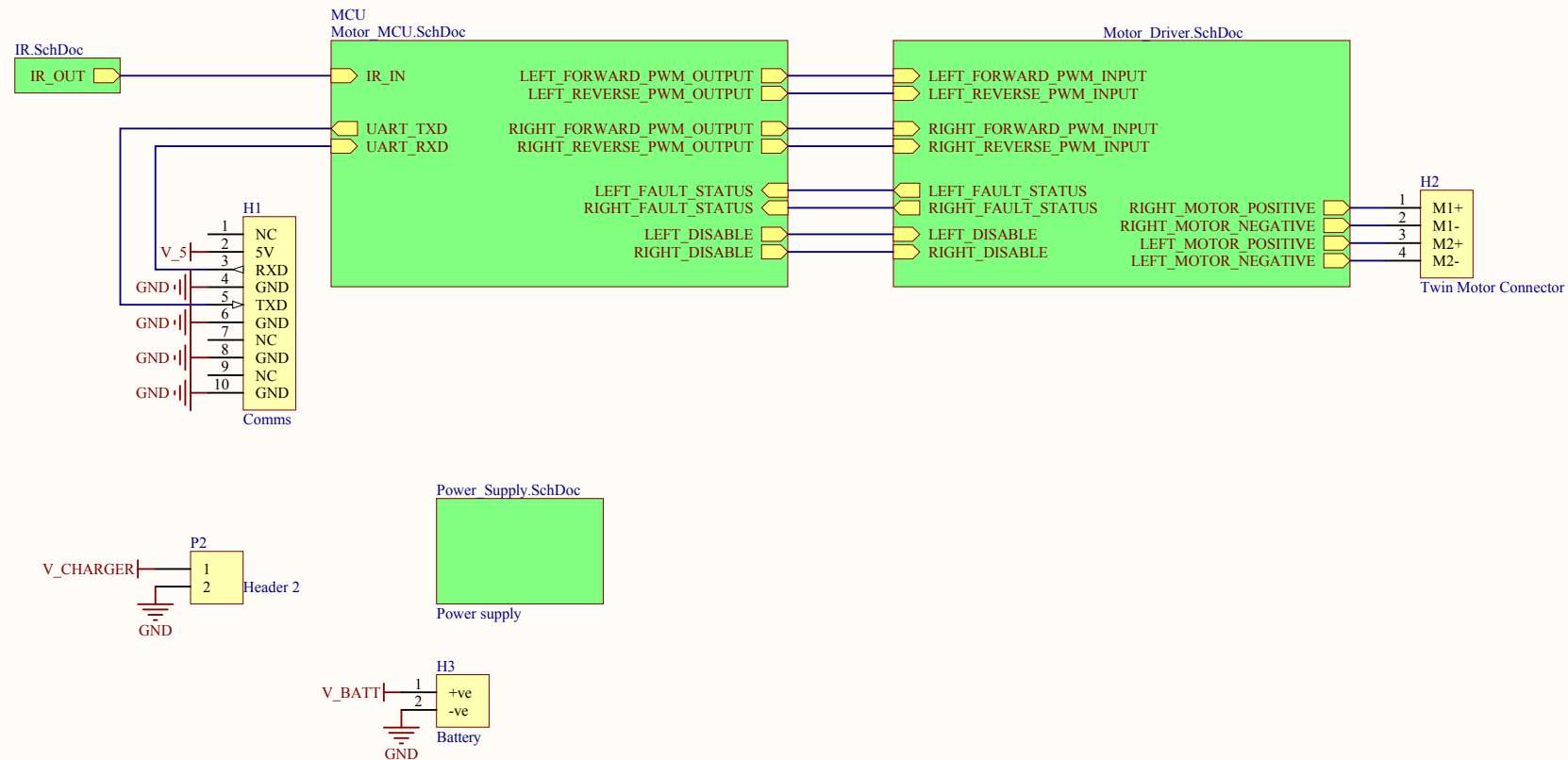
D

A

B

C

D



Title Top Level - Motor Board		ENEL429 Group 9 ECE Department University of Canterbury Christchurch 8041 New Zealand	
Drawn by wgl18, hvj10		Revision: 1	
Date: 9/05/2011		Time: 12:37:02 p.m. Sheet 1 of 5	
File: J:\enel429-2011-wackyracers-9\Altium\Schematics\Motor Board.SchDoc			

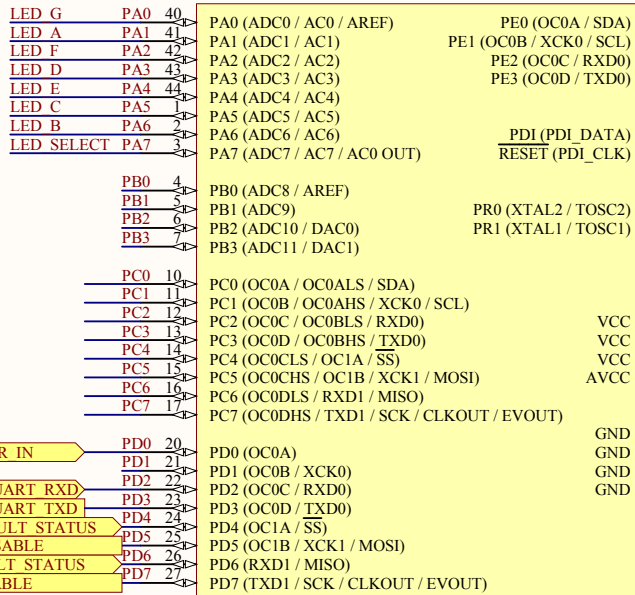


1

2

3

4



ATXMEGA16A4-AU

U3

HDSM-541C

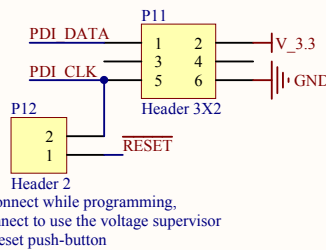
D

2

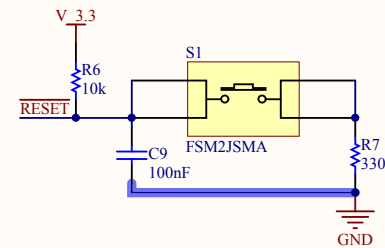
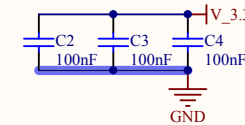
3

4

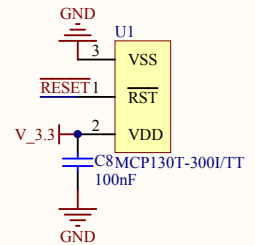
RIGHT FORWARD PWM OUTPUT
RIGHT REVERSE PWM OUTPUT
LEFT FORWARD PWM OUTPUT
LEFT REVERSE PWM OUTPUT



XMEGA local decoupling caps



Voltage Supervisor

Title **Motor MCU**

Drawn by wgl18

1

Revision: 1

Date: 9/05/2011

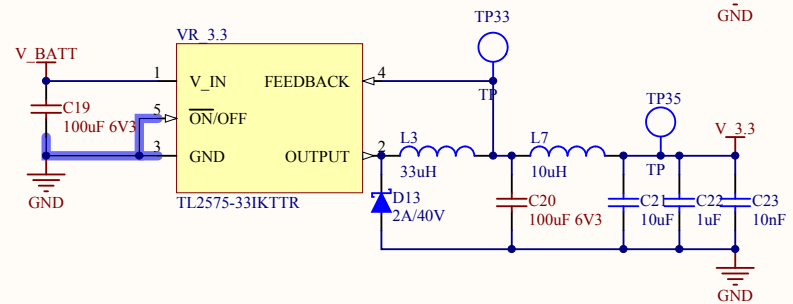
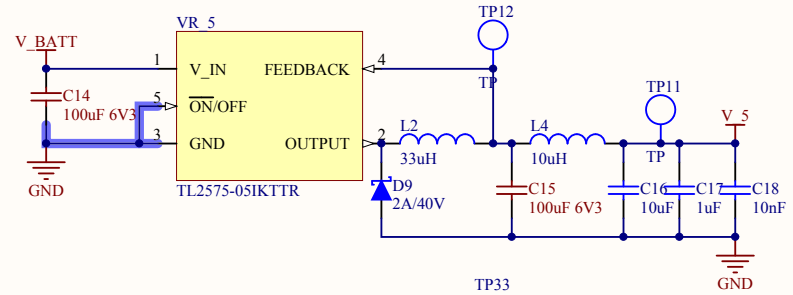
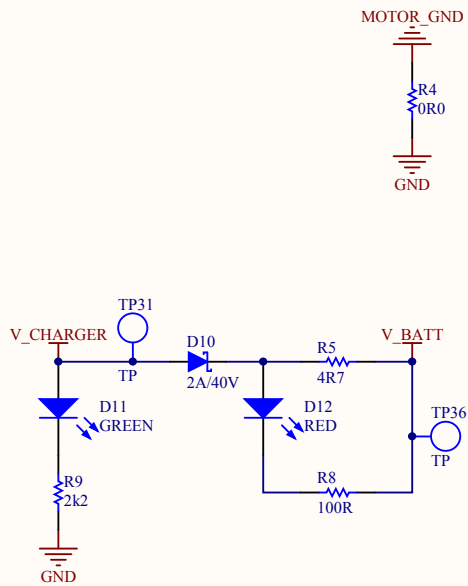
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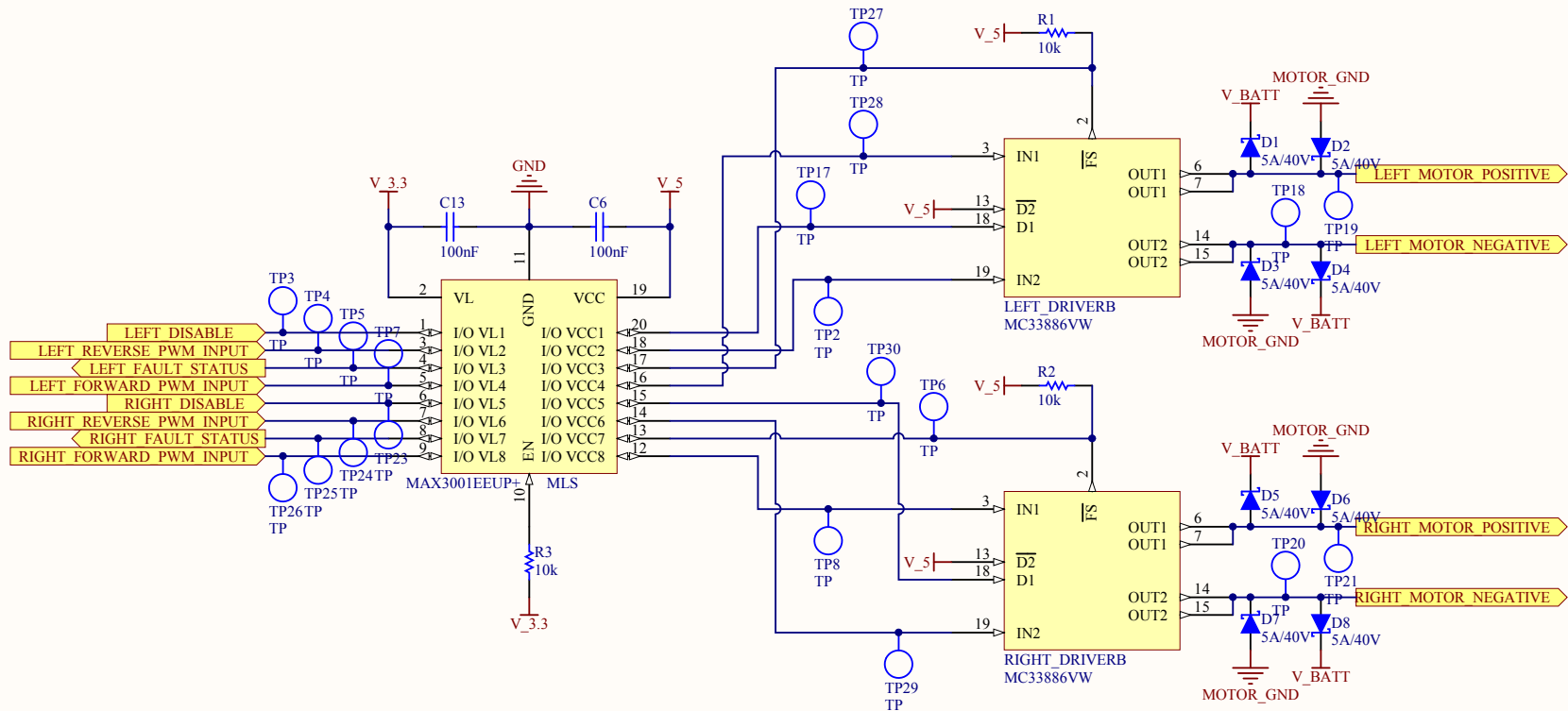
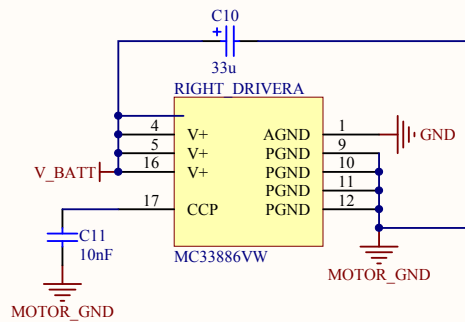
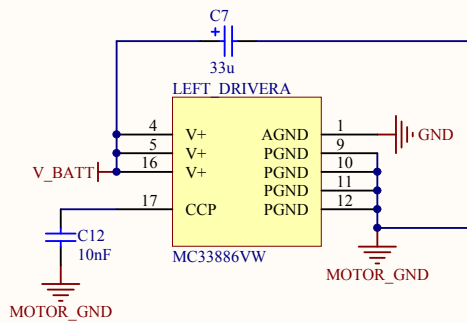
Sheet 2 of 5

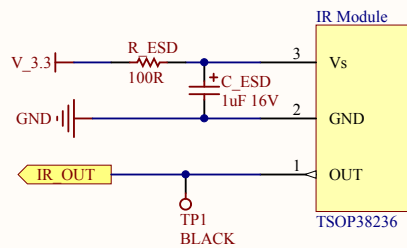
File: J:\enel429-2011-wackyrcers-9\Altium\Schematics\Motor MCU.SchDoc


ENEL429 Group 9
ECE Department
University of Canterbury
Christchurch 8041
New Zealand









Title IR		ENEL429 Group 9 ECE Department University of Canterbury Christchurch 8041 New Zealand	 UNIVERSITY OF CANTERBURY Te Whare Wānanga o Waitaha CHRISTCHURCH, NEW ZEALAND
Drawn by tdjb216	Revision: 1		
Date: 9/05/2011	Time: 12:37:03 p.m.	Sheet 5 of 5	
File: J:\enel429-2011-wackyracers-9\Altium\Schematics\IR.SchDoc			

Comment	Description	Designator	Footprint	LibRef	Quantity
ATXMEGA16A4-AU			TQFP80P1200X1200X120-44N	ATXMEGA16A4-AU	1
10uF	CAP 100F 10% 10V X5R 0805	C1, C16, C21	0805	CP_10uF 0805	3
100nF	CAP CER 100F 50V X5R 0603	C2, C3, C4, C5, C8, C8, C9, C13	0603	CP_100nF 0603	8
CP_TANT_33uF	CAP TANT 330F 20V 10% SMD	C7, C10	6032	CP_TANT_330F_20V	2
10nF	CAP CER 10000PF 100V X7R 0603	C11, C12, C18, C23	0603	CP_10nF 0603	4
100uF 6V3	100uF 6.3V 1206 multi-layer ceramic capacitor	C14, C15, C19, C20	1206	CP_CER 100uF_1206_6V3	4
1uF	CAP CER 1.0UF 50V X7R 0603	C17, C22	0603	CP_1uF_50V_0603	2
1uF 16V	SM Tantalum Cap	C_ESD	TANT3216	TANT1uF_16V_3216	1
5A/40V	DIODE SCHOTTKY 5A 40V SMC	D1, D2, D3, D4, D5, D6, D7, D8	DIODE_SMC	DS_SSC54-E3/57T	8
2A/40V	Schottky Diode - 2A/30V	D9, D10, D13	SMB_DIODE	DS_SS230TP	3
LED Green	Green LED 0805	D11	Diode_0805	DL_LED Green 0805	1
LED Red	Red LED 0805	D12	Diode_0805	DL_LED Red 0805	1
Comms	Header, IDC 10-Pin	H1	918510x323	Header 10	1
Twin Motor Connector	5.08mm Pluggable Terminal Header	H2	TMHDR4	AVR ISP Header 4	1
Battery	5.08mm Pluggable Terminal Header	H3	TMHDR2	AVR ISP Header 2	1
TSOP38236		IR Module	TSOP38236 IR Receiver	TSOP38236	1
IN_FERRITE CHIP 120 OHM 800mA 0805	FERRITE CHIP 120 OHM 800mA 0805	L1	0805	IN_FERRITE CHIP 120 OHM 800mA 0805	1
Inductor	INDUCTOR POWER SHIELD 33UH 2.6A SMD	L2, L3	DR124	IN_33u 2A SMT	2
10uH	INDUCTOR POWER 10UH 2.0A SMD	L4, L7	WE-PD	IN_10uH 2A SMT	2
MC33886VW		LEFT_DRIVER, RIGHT_DRIVER	SOP127P1420X340_HS-20N	MC33886VW	2
MAX3001EEUP+		MLS	TSOP65P640X110-20N	MAX3001EEUP+	1
Header 2	Header, 2-Pin	P2, P12	HDR1X2	Header 2	2
Header 11	Header, 11-Pin	P4, P5, P6, P7	HDR1X11	Header 11	4
Header 3X2	Header, 3-Pin, Dual row	P11	HDR2X3	Header 3X2	1
BC857	TRANSISTOR PNP 45V -100MA SOT23	Q1, Q2, Q3, Q4, Q5, Q6, Q7, Q8	SOT23	TN_BC857	8
BC847	TRANS NPN GP 100MA 45V SOT23	Q9	SOT23	TN_BC847	1
10k	RES 10.0K OHM 1/10W 1% 0603 SMD	R1, R2, R3, R6	0603	RS_10k 0603	4
4R7	RES 4.7R 1/10W 5% 0603 SMD	R5	0603	RS_4R7_0603	1
330R	RES 330 OHM 1/10W 1% 0603 SMD	R7	0603	RS_330R 0603	1
100R	RES 100 OHM 1/10W 1% 0603 SMD	R8	0603	RS_100R 0603	1
2k2	RES 2.2K OHM 1/10W 5% 0603 SMD	R9	0603	RS_2k2 0603	1
680R	RES 680 OHM 1/10W 1% 0603 SMD	R10, R11, R12, R13, R14, R15, R16, R18	0603	RS_680R 0603	8
180R	RES 180 OHM 1/10W 1% 0603 SMD	R17	0603	RS_180R 0603	1
100R	0603 Resistor	R_ESD	R0603	100R_R0603	1
FSM2JSMA	DPST SMD Switch	S1	FSM2JSMA	SW_FSM2JSMA	1
BLACK	TEST POINT PC MINI .040"D BLACK	TP1	testpoint-small	TP5001	1
MCP130T-300I/TT	Microcontroller Supervisory Circuit with Open Drain Output, 3-Pin SOT-23, Industrial Temperature, Tape and Reel	U1	SOT-23-TT3_N	MCP130T-300I/TT	1
HDSM-541C	2 character 7 segment display	U3	HDSM-541C	HDSM-541C	1
TL2575-33IKTTR		VR_3_3	TO170P1524X483-6N	TL2575-33IKTTR	1
TL2575-05IKTTR		VR_5	TO170P1524X483-6N	TL2575-05IKTTR	1